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ABSTRACT

This report provides a general overview of the activities and experiences of the high school sophomores of 1980, using information from High School and Beyond's (HS&B) base-year, first follow-up (1982), and second follow-up (1984) surveys. It contains a summary of descriptive information about 1980 sophomores two years after leaving high school--their educational, vocational, socioeconomic, and familial status, and their plans and attitudes. The report demonstrates the wealth and depth of the data and presents some illustrative findings from the preliminary analyses. The remainder of the material, Chapters II through V, is organized into five topical areas. Chapter II provides an overview of what 1980 sophomores were doing in the spring of 1984; Chapter III describes their education experiences (equivalent diplomas for dropouts, enrollment in postsecondary education, field of study, and financing); Chapter IV, their labor force experiences (employment status, type of job, and earnings); Chapter V, their experiences with electronic equipment, their voting behavior, and their life goals. Appendices contain: (1) the HS&B data files available for public use; (2) the 26 classification variables used to define subgroups for analysis; and (3) technical notes on the sample design and data quality. (LMO)

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Two Years After High School:
A Capsule Description of 1980 Sophomores

The National Opinion Research Center (NORC)

Calvin C. Jones
Penny A. Sebring
Susan Campbell

Helen MacArthur
Project Officer
Center for Statistics

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Foreword

This report was produced by the National Opinion Research Center (NORC) under the terms of a contract with the Center for Statistics (CS) formerly known as the National Center for Education Statistics (NCES). In a recent reogranization of the Office of Educational Research and Improvement, within the U. S. Department of Education, certain changes were made in the mission and responsibilities of NCES and in that connection the agency was renamed the Center for Statistics or CS.

This report provides a general overview of the activities and experiences of the high school sophomores of 1980, using information from High School and Beyond's base-year, first follow-up (1982), and second follow-up (1984) surveys. CS plans to conduct or to sponsor a number of analytical reports that will address a variety of topics in greater detail than that provided here. Computer tapes available to those wishing to carry out their own analyses of special questions and issues. Among the topics to be addressed in future CS analytic studies are: Persistence in College, Impact of Vocational Education, College Offerings and Enrollment, Student Financial Aid in Colleges.

CS also maintains a large set of summary statistics on a microcomputer database. Statistics contained in the database cover the same topics described in this report but in much greater detail. For instance, in addition to the activities of the total 1980 senior population (table 1) the database has estimates for the activities of males and females and five race/ethnic groups, each further broken down by 29 independent variables.

Information about obtaining HS&B computer tapes is available from the U.S. Department of Education, Office of Educational Research and Improvement, Information Systems and Media Services Branch, 555 New Jersey Avenue, NW., Room 327, Capitol Place Building, Washington, D.C. 20208-1327.

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I. INTRODUCTION

Background and Purpose

The High School and Beyond (HS&B) study is a nationally representative sample survey of 1980 high school sophomores and seniors in the United States. As a large-scale, longitudinal survey, the study's primary purpose is to observe the educational and occupational plans and activities of young people as they pass through the American educational system and take on their adult roles. The study should ultimately contribute to an understanding of the development of young adults and of the factors that determine individual education and career outcomes. Such information is useful as a basis for review and reformulation of federal, state, and local policies affecting the transition of youth from school to adult life.

The availability of this longitudinal data base encourages in-depth research for meeting the educational policy needs of the 1980s at local, state, and federal levels. HS&B data will help in evaluating: the strength of secondary school curricula; the quality and effectiveness of secondary and postsecondary schooling; the demand for postsecondary education; problems of financing postsecondary education; the adequacy of postsecondary alternatives open to high school students; the need for new types of educational programs and facilities to develop the talents of our youth; and the educational, vocational, and personal development of young people and the institutional, familial, social, and cultural factors that affect that development.

HS&B is the second in a program of longitudinal studies sponsored by the Center for Statistics (CS). The first was the

National Longitudinal Study of the High School Class of 1972 (NLS-72), which began in 1972, completed its fourth follow-up survey in 1979, and will conduct a fifth in 1986.

The CS (under its former name the National Center for Education Statistics) longitudinal studies program is based on the assumption that federal, state, and local policies affecting the transition from school to work need to be grounded on an understanding of the processes that link the American educational system with the inputs such as student characteristics and outputs such as degrees and diplomas awarded. The longitudinal studies program provides statistics on the education, work, and family experiences of young adults for the pivotal years during and immediately following high school. The fourth follow-up of the NLS-72 provides information on the outcomes of schooling seven years after high school, while the base year and two follow-up HS&B surveys provide current information on high school experiences, student cognitive growth, and the transition to early adult life.

The HS&B study was designed to gather the same types of data as were collected in the first CS longitudinal study. The study of the HS&B senior cohort replicates many aspects of the NLS-72, both in the questionnaires and in the cognitive tests. This allows interstudy comparisons to be made of the possible effects of economic and social changes that occurred in the years since 1972. However, the second study differs from the first in two significant ways. First, it addresses certain elements in the educational process that were not included in the earlier study. HS&B is the first longitudinal study of students to survey

parents concerning their aspirations for their children and their ability and desire to pay for the fulfillment of these aspirations. HS&B is also the first study to survey teachers concerning their assessment of their students' futures. Second, it extends the scope of the population to the sophomores of 1980 as well as the seniors; and thus makes possible a fuller understanding of the secondary school experience, its long-term impact on students, and the factors that influence the decision to drop out of school early. Detailed information on courses taken and grades achieved (from complete high school transcripts) also permits examination of the relationships between student and school characteristics, on the one hand, and patterns of course taking and student achievement on the other.

HS&B Base Year Survey

The base year survey was conducted in spring 1980. The study design included a highly stratified national probability sample of over 1,100 high schools with a sample of 36 seniors and 36 sophomores per school. (In those schools with fewer than 36 seniors or sophomores, all eligible students were included in the sample.) Cooperation from both schools and students was excellent. Over 30,000 sophomores and 28,000 seniors enrolled in 1,015 public and private high schools across the nation participated in the base year survey. The response rate for schools was 70 percent (91 percent after replacement of nonresponding schools with similar schools) and for students within participating schools it was 84 percent.

Questionnaires and cognitive tests were administered to each student in the HS&B sample. The student questionnaire covered school experiences, activities, attitudes, plans, selected background characteristics, and language proficiency. Other groups of respondents provided other types of information. The administrator in each selected school filled out a questionnaire about the school; teachers in each school were asked to make comments on students in the sample; each twin in the sample was identified and his/her counterpart twin was also identified and surveyed; and a sample of parents of sophomores and seniors (about 3,600 for each cohort) was surveyed primarily for information on plans for financing of higher education. The total survey effort thus provided a comprehensive data base for analyses in education and other areas of behavioral and social science.

HS&B First Follow-Up Survey

The first follow-up survey took place in spring 1982. All students who had been selected for inclusion in the base year survey, whether or not they actually participated, had a chance of being included in the first follow-up sample. The sophomore cohort sample design called for including with certainty all members still in the same school, and for subsampling all others. The resulting sample size was 29,737. Of these, a subsample of 18,000 was selected for a study of high school transcripts.

Cognitive tests--the same ones employed in the base year survey--and questionnaires were administered to those out of school (dropouts and early graduates) as well as to those still in school, including those who had transferred to other schools.

Questionnaires were completed by 28,119 (94.6 percent) of the 29,737 sample members and the test battery by 26,216 (88.2 percent). School administrators were asked to complete a school questionnaire to update information about their schools and also to provide a copy of their "Master Teaching Schedule."

In designing the senior cohort first follow-up survey, one of the goals was to reduce the size of the retained sample to about 12,000 while keeping sufficient numbers of certain subgroups (e.g., Hispanics, blacks and other minority groups) to allow important policy analyses. A total of 11,227 (93.6 percent of the 11,995 persons sub-sampled) completed the first follow-up questionnaire--8,990 by mail, 956 by telephone, and 1,281 by in-person interview. Information was obtained about the respondents' school and employment experiences, family status, and attitudes and plans. Tests were not administered to the senior cohort members.

Both the base year survey and the first follow-up survey included an Hispanic supplement, i.e., a deliberate oversampling of Hispanic students so that this subset of the population would be sufficiently represented to permit relevant policy analyses. The Hispanic supplements were included at the request of, and with funding supplied by, the Office of Bilingual and Minority Language Affairs (OBEMLA) within the Department of Education.

Base year survey data are summarized in a descriptive way for both cohorts in A Capsule Description of High School Students (CS 81-244, April 1981). First follow-up survey results are covered in two reports--Two Years after High School: A Capsule Description of 1980 Seniors (CS 84-209, April 1984), and

Two Years in High School: The Status of 1980 Sophomores in 1982 (CS, 84-207, April 1984).

Several CS-sponsored analytic studies using these data have been undertaken. Among the topics investigated in special in-depth analyses were excellence in secondary education, transition to postsecondary education, high school dropouts, transition of Hispanic students from high school to postsecondary education and from school to work, and the high school diploma as a terminal degree.

HS&B Second Follow-Up Survey

The second follow-up survey took place in spring 1984. The sample for the second follow-up consisted of 12,199 members of the senior cohort and 15,000 from the sophomore cohort. The senior cohort included 11,500 students who participated in the base year, 495 students who did not participate in the base year, and 204 non-sampled co-twins (or co-triplets) of sampled students.

The design for the sophomore cohort followed a plan similar to that for seniors. Approximately 15,000 cases were selected from among the 18,500 retained for the High School Transcripts Study (1982-83). The sample was also designed to preserve as many students as possible whose parents had participated in the base year survey. In addition, 1,076 persons who had not participated in the base year study and 723 sampled cases who had not completed the first follow-up survey were also included in the sample.

Both cohorts of the sample included disproportionate numbers of policy-relevant subpopulations, which permitted subgroup analyses among Hispanics, blacks, and whites. In the senior

cohort, the selection of 1,500 additional Hispanic students beyond the number expected in the CS core sample allows more complex, detailed analysis of Hispanic student outcomes. (This supplementary sample was supported by the Office for Bilingual Education and Minority Language Affairs.) The design also preserved as far as possible the original samples of Asians and Pacific Islanders, American Indians, and twins of all races.

In both senior and sophomore cohorts only one instrument, a mailback questionnaire, was used. That instrument contained many questions from the first follow-up. Seniors were asked to update background information, to provide information about postsecondary education, work experience, military service, family information, income, and life goals. New items included a limited series on computer literacy, detailed information on financial assistance received from parents for postsecondary education, and periods of unemployment. The mailback questionnaire was returned by 73 percent of the senior sample. Thirteen percent of the sample were then interviewed by telephone and 5 percent were interviewed in person. The completion rate for the senior cohort was 91 percent. Among the sophomore cohort, 60.6 percent returned their mail questionnaire. Telephone and personal interviews brought the completion rate up to 92 percent.

The base year, first follow-up, and second follow-up data are available for public use, and researchers are encouraged to conduct additional analytic studies using this data base.

HS&B Third Follow-Up Survey

In 1986 the third follow-up survey of both HS&B cohorts will take place along with the fifth follow-up survey of a portion of the High School Class of 1972 (NLS-72) sample.

Objectives and Organization of This Report

This report contains a summary of descriptive information about 1980 sophomores two years after leaving high school--their educational, vocational, socioeconomic, and familial status, and their plans and attitudes. The report demonstrates the breadth and depth of the data and presents some illustrative findings from our preliminary analyses. (A similar report is available for the 1980 senior cohort.) The remainder of this report, chapters II through V, is organized into five topical areas. Chapter II provides an overview of what 1980 sophomores were doing in the spring of 1984; chapter III describes their education experiences (equivalent diplomas for dropouts, enrollment in postsecondary education, field of study, and financing); chapter IV, their labor force experiences (employment status, type of job, and earnings); chapter V, their experiences with electronic equipment, their voting behavior, and their life goals. Appendix A presents a description of HS&B data files available for public use; appendix B defines the variables that were used to divide the total population into subgroups; and appendix C discusses the HS&B sample design and the quality of the data.

II. CURRENT ACTIVITIES AND FAMILY FORMATION

The 1980 sophomore cohort was initially surveyed during the spring of 1980, when all of its members were finishing the last semester of tenth grade. This group has since been resurveyed twice. The first time was in 1982 at the end of their senior year in high school. Most of the sophomore cohort were at the critical point of choosing adult roles, such as continuing their education, joining the labor force, establishing families, joining the military, or engaging in other activities. By this time a relatively small group of the sophomore cohort, about 17 percent, had dropped out of school. They also completed questionnaires and will continue to be part of the sample in years to come. The sophomore cohort is unique in that it offers the opportunity to study the decision to leave high school and its long term consequences.

The second and most recent survey of this group occurred in 1984, a time when many of the sophomore cohort were at another important juncture. Some were continuing or completing activities begun earlier, such as postsecondary education. Others were making transitions, from school to work, from work to military service, or from work to school. As they were becoming older, many more were starting families.

This chapter provides an overview of the activities of the 1980 sophomores in 1984. Later chapters describe some of these activities in more detail. The reader should note that tables entitled "1980 sophomores" include all sophomores, including those who did not graduate from high school. All tables entitled "1982

seniors" contain only the portion of the sophomore cohort that graduated from high school or received an equivalent diploma by spring 1984.

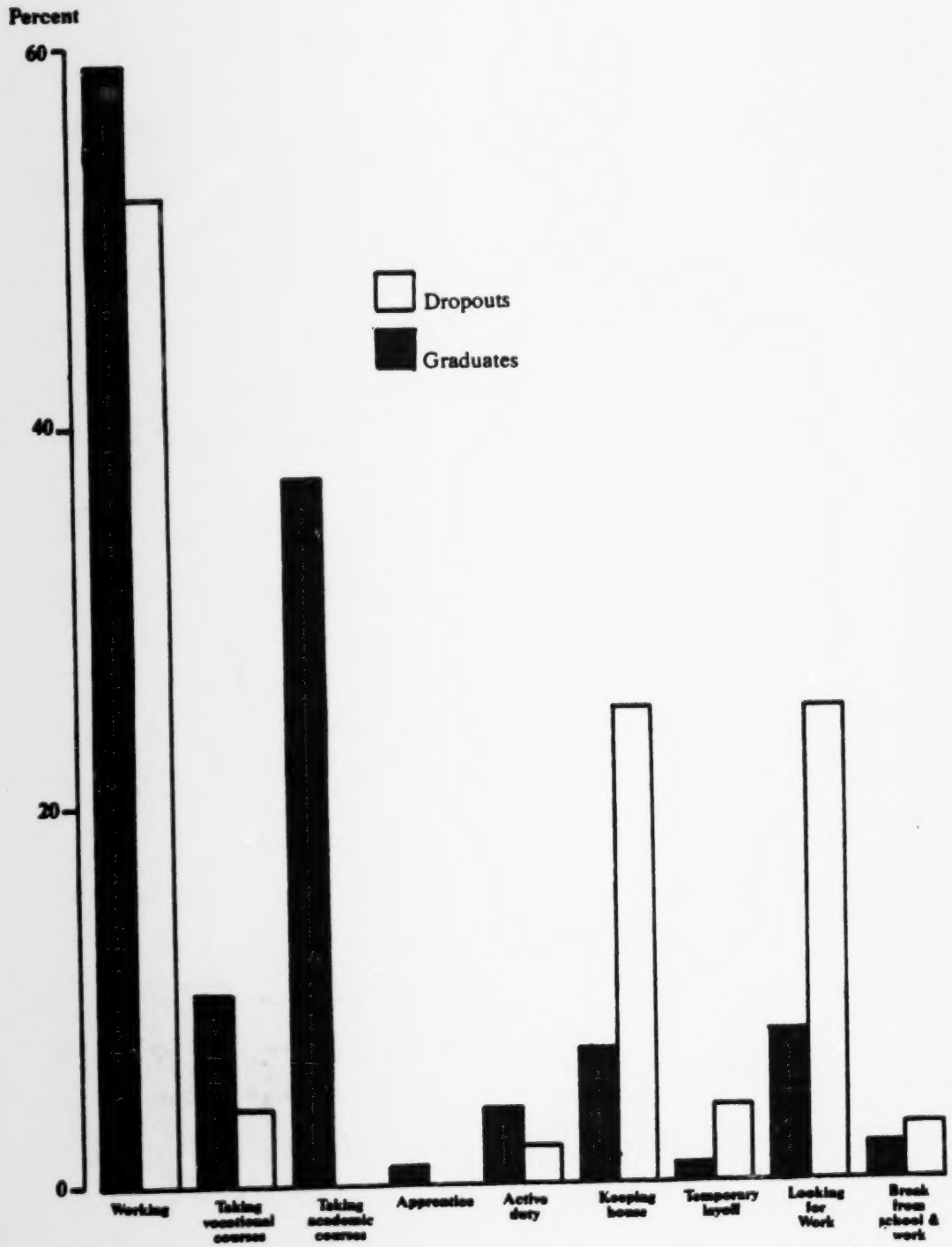
Selected Activities: An Overview

The majority of the 1980 sophomores were working, either full-time or part-time, in 1984. However, many of the other activities they pursued depended on whether or not they had graduated from high school. Figure 1 details the activities of both graduates and dropouts. For this figure and all subsequent tables, dropouts are those who left high school and had not obtained a diploma by spring of 1984.

As noted, the majority of the class of 1982 was working in the spring of 1984, and this is true not only for the whole population but for high school graduates and dropouts separately. The most striking difference between the two groups arises in postsecondary educational activity. Over a third of the 1982 graduates were enrolled in academic courses in 1984, and a tenth were enrolled in vocational courses. While one would expect lower participation rates from the dropouts in the cohort, their near total absence from educational activities--only 4 percent were enrolled in vocational courses and none in academic courses--is remarkable. The decision to discontinue high school seemed to ensure that, at least by 1984, the dropouts would not participate further in formal education.

The dropouts were also far more likely than the graduates to be unemployed and looking for work or keeping house with no other

Fig. 1 Percentages of 1980 high school sophomores in specified activities by status as graduate or dropout: Spring 1984



job. For both of these activities about a quarter of the dropouts reported participation, whereas under a tenth of the graduates were so engaged.

Family Formation

By 1984, most of the 1980 sophomores were 20 years old, and therefore it is not surprising that most of them remained unmarried. Likewise, they rarely reported being widowed, divorced, or separated. However, there were noticeable differences in the rates of marriage and cohabitation among various subgroups. For instance, only 7 percent of the men but 18 percent of women indicated they were married during the spring of 1984 (table 1).

American Indian/Alaskan Natives had the highest rates of marriage and living with a person of the opposite sex. At 21 percent, their rate of marriage was well above the population's national average of 12 percent. Blacks and Asian/Pacific Islanders reported the lowest rates of marriage and cohabitation. Generally the sophomore cohort chose to get married or pursue postsecondary education but not combine the two activities. For instance, there was a clear inverse relationship between plans to obtain postsecondary education and marital status. Individuals who during their last year in high school indicated no intention to further their education (PSE Plans) were much more likely to be married in spring 1984 than those who had postsecondary education plans. Also, the higher the educational goal, the more likely it was that respondents would not marry. Only 5 percent of the 1980

Table 1. Percentages of 1980 high school sophomores[a] in each marital category, by selected characteristics: spring 1984.

	Never married	Married	Widowed, separated, divorced	POSSLQ[b]
Total population	82	12	2	4
Sex:				
Male	89	7	1	3
Female	75	18	2	5
Race/ethnicity:				
Hispanic	80	13	3	4
American Indian/Alaskan Native	61	21	9	10
Asian/Pacific Islander	92	6	0	2
Black	89	7	1	3
White	81	13	2	4
Other	83	11	2	4
PSE plans:				
None	70	21	3	6
Vocational/technical	78	15	2	6
Less than 4-year degree	85	11	1	3
College degree	92	5	1	2
Advanced degree	92	5	1	3
H.S. geographic region:				
East	89	7	1	4
North	83	11	1	4
South	77	18	3	3
West	81	12	1	6
H.S. urbanicity:				
Urban	83	11	2	4
Suburban	84	10	1	4
Rural	78	16	2	4
PSE type and status (10/83):				
Part-time private 4-year	100	0	0	0
Part-time public 4-year	87	13	0	0
Part-time public 2-year	90	5	1	3
Part-time other	83	10	1	6
Full-time private 4-year	99	0	0	1
Full-time public 4-year	96	2	0	2
Full-time public 2-year	95	3	0	1
Full-time other	91	6	0	3
Non-student	72	19	3	6

[a]Includes both graduates and dropouts.

[b]POSSLQ: Unmarried persons of opposite sex sharing living quarters.

sophomores who intended to obtain four or more years of college were married, compared to 15 percent who intended to go to vocational school.

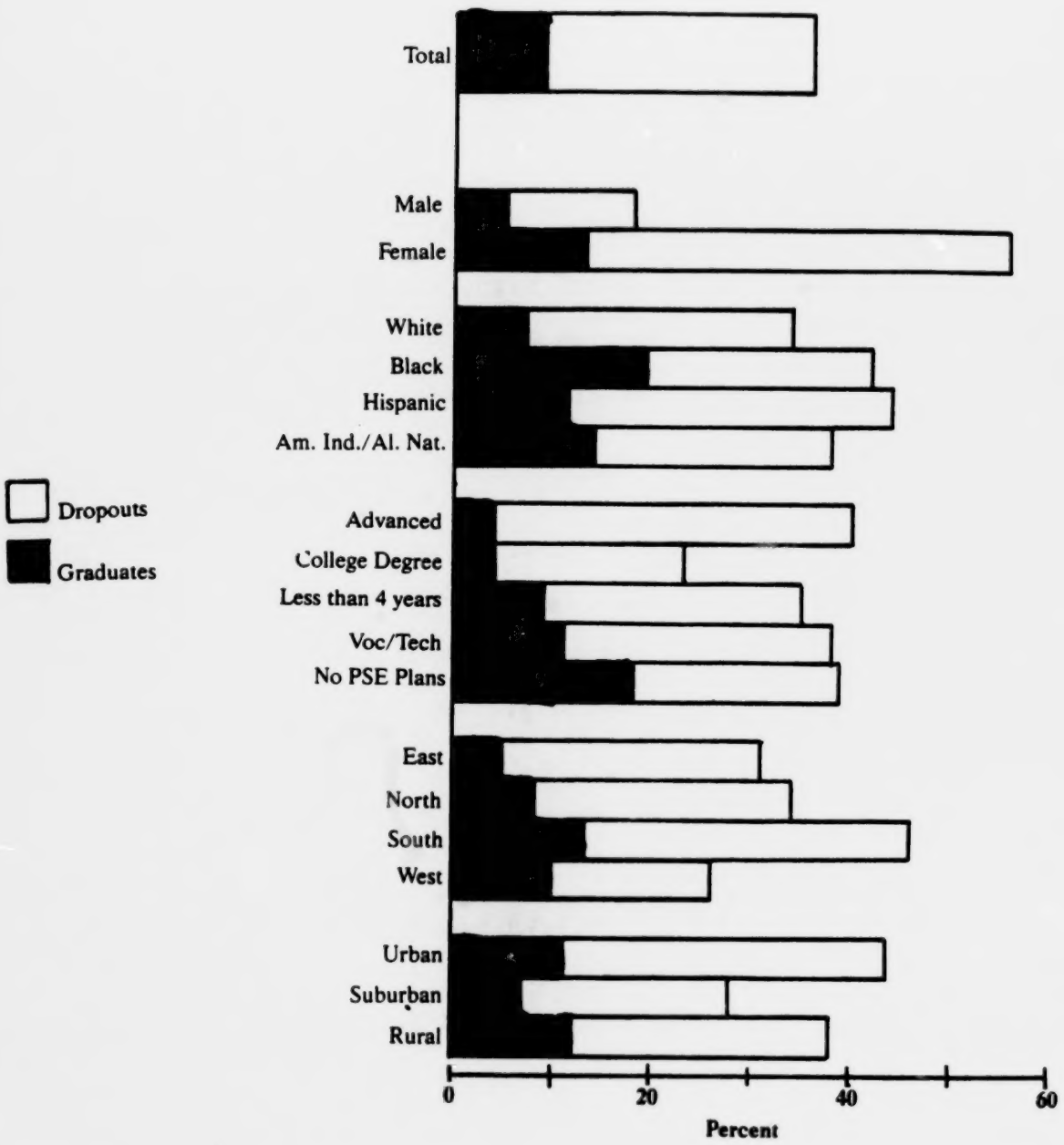
Results were similar for participation in postsecondary education. Individuals who were enrolled in some form of postsecondary education during October 1983 were less likely to be married or living with someone than those who were non-students. Again, degree of participation was inversely related to marital status. Full-time students were less likely to be married than part-time students.

Rates of marriage varied somewhat across regions. Persons who attended high schools in the South were much more likely to report being married in spring 1984 (18 percent). Easterners were least likely to report marriage (7 percent). The degree of urbanicity also seemed to make a difference: people from rural high schools were more likely than people from urban and suburban high schools to have married.

The overall proportion of 1980 sophomores with children in 1984 was the same as the overall proportion married--12 percent (figure 2). There was an enormous difference between graduates and dropouts in the proportion reporting that they had children, with the dropouts at least three times as high as high school graduates after correcting for sampling error.

Among males and females, the pattern was about the same as for marriage. Overall, roughly twice as many females as males were parents; and among dropouts, females were almost three times more likely to have children.

Fig. 2 Percentages of 1980 high school sophomores with children, by status as graduate or dropout: Spring 1984



Differences among racial groups in having children were similar to those reported for marital status. Among the total population, American Indian/Alaskan Natives were most likely to have children, and Asian/Pacific Islanders were least likely. This was mostly true among high school graduates as well. However, among dropouts, Native Americans and Hispanics were about equally likely to have children. One important difference between parental status and marital status was that, whereas blacks were among the least likely to report being married, they were among the most likely to report having children.

Comparing the incidence of parenthood among those with varying postsecondary education intentions yields results that are similar to those for marital status. Those who planned only limited or no participation in postsecondary education were the most likely to indicate they had children. This was true for both the total population and for the high school graduates.

In terms of postsecondary education (not shown in figure) nonstudents were much more likely than students to report having children. This was the case for the total population as well as the high school graduates.

Differences among the geographic regions mirrored those observed for marital status. People from the South were most likely to have children, and Easterners were least likely. This was the case for the total population and high school graduates. Among dropouts, Southerners were also most likely to report having children, but there were no clear other differences. A smaller percentage of suburban students, compared to urban and rural, reported having children.

The second follow-up survey also collected information on the number of children the sophomore cohort anticipated having as well as the number of children they already had (see table 2). Almost half of this age group expected to have two children, and about one third expected to have three or more children. In terms of the number of children they already have, only a small percentage (10) had one child, and only 2 percent had two or more children. This is not surprising in view of the age of the sophomore cohort.

It is noteworthy that males and females were remarkably similar in their expectations for children. Despite this similarity, however, females were about twice as likely as males to have one child or two or more children. Young women are simply fulfilling their expectations at an earlier age than the young men. The implications of these results are that, as this cohort matures, the incidence of parenthood among males and females should become more comparable. In fact, results of the second follow-up of the senior cohort confirm this tendency.

Differences among those with varying levels of educational aspirations (PSE plans) were not appreciable. However, it is worth mentioning that there was a small but consistent tendency among those who expected no or limited further education to expect two children. As educational aspirations rose, there was a greater tendency to expect three or more children. For instance, among people who planned no further education, 52 percent expected two children and only 26 percent thought they would have three. Among those who planned to obtain an advanced degree, 42 percent expected two children, and another 42 percent expected three children.

Table 2. Anticipated number of children and actual number of children reported by 1980 high school sophomores[a], by selected background characteristics: spring 1984.

Characteristics	Number of children anticipated				Current parental status		
	No children	One child	Two children	Three or more children	Have no children	Have one child	Have two or more children
Total population	11	7	48	34	88	10	2
Sex:							
Male	13	6	48	33	93	6	1
Female	8	8	48	35	83	14	3
Race/ethnicity:							
Hispanic	11	11	44	34	82	14	4
Amer.Ind/Al.Nat	11	13	58	26	77	19	4
Asian/Pac.Isl.	9	3	48	40	95	4	1
Black	14	11	46	29	78	18	5
White	10	6	49	35	91	8	2
Other	12	8	45	35	92	8	0
PSE plans:							
None	12	10	52	26	77	18	5
Vocational/technical	11	8	51	30	87	11	2
Less than 4-year degree	11	6	48	34	90	9	1
College degree	7	5	47	41	96	4	0
Advanced degree	10	6	42	42	96	4	1
H.S. geographic region:							
East	12	6	46	37	93	6	1
North	10	6	47	38	89	9	2
South	10	10	53	27	84	13	3
West	11	7	45	36	88	10	2
H.S. urbanicity:							
Urban	11	8	49	32	84	13	3
Suburban	10	7	48	36	91	7	1
Rural	11	8	49	32	86	11	3
PSE type and status (10/83):							
Part-time private 4-year	8	0	51	41	99	1	0
Part-time public 4-year	5	6	57	32	95	5	0
Part-time public 2-year	14	7	45	34	97	3	0
Part-time other	4	6	64	26	91	9	0
Full-time private 4-year	9	3	43	46	99	1	0
Full-time public 4-year	8	4	46	41	98	2	0
Full-time public 2-year	10	6	48	36	97	3	0
Full-time other	7	6	49	39	95	4	1
Non-student	12	9	50	30	81	16	4

[a]Includes both graduates and dropouts.

In terms of the actual number of children respondents reported as of February 1984, it is clear that persons with higher educational aspirations are postponing their childbearing until they are further along with their education. Eighteen percent of persons with no postsecondary education plans already had one child, whereas only 4 percent of persons who plan to take an advanced degree had one child.

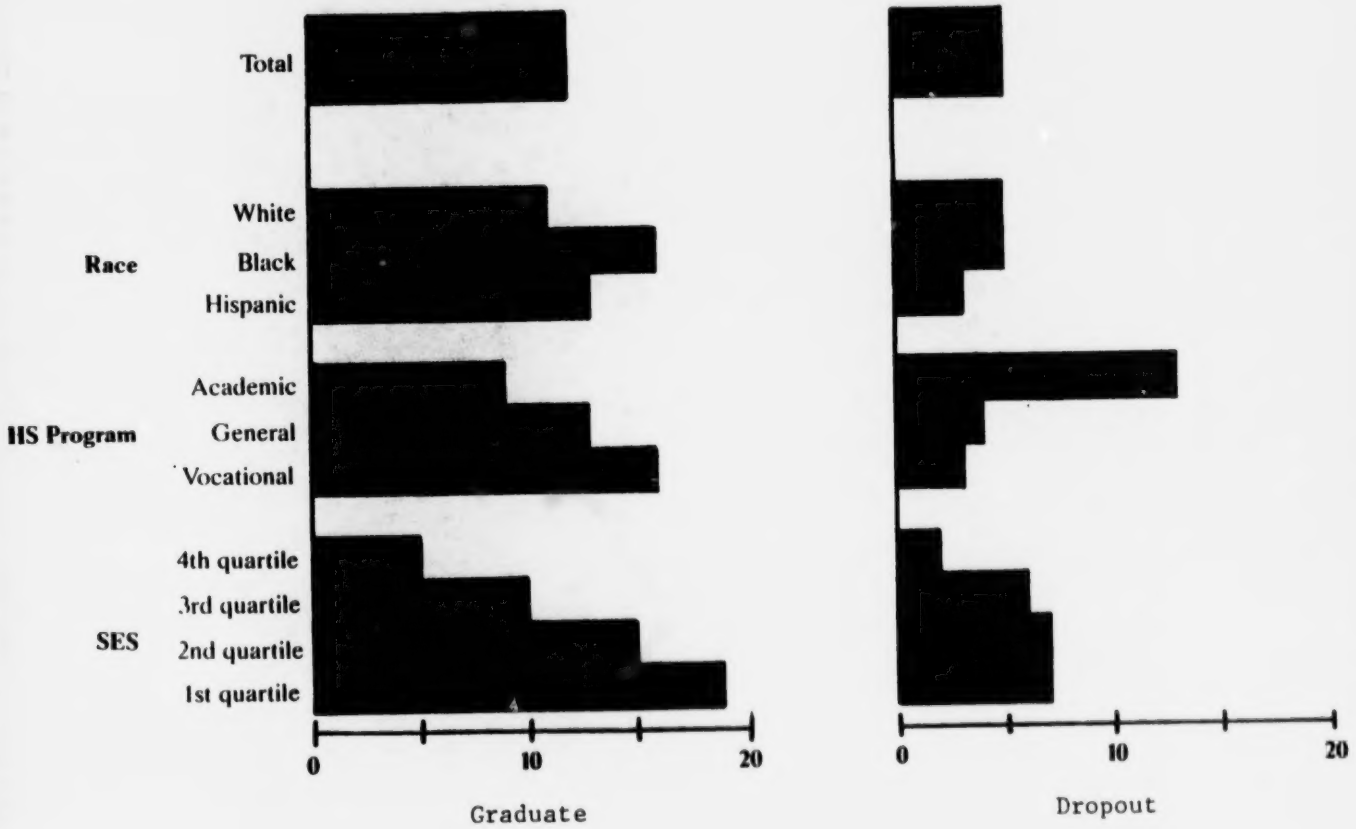
Small differences in the number of children anticipated appeared across the postsecondary education type and status categories, but the clearest differences occurred in the percentages reporting that they already had one or two or more children. Nonstudents were much more likely to report having one child (16 percent) and having two or more children (4 percent).

Persons from the South were most likely to anticipate two children and somewhat less likely to expect three. However, as shown in figure 2, a higher percentage of the Southerners reported already having one child and having two or more children. People from different size communities were very similar in their expectations of family size. However, the suburban segment was much less likely to report having one child or having two or more. This group appears to be postponing childbearing more than people from urban and rural areas.

Military Service

Survey members were asked to indicate whether, since leaving high school, they had ever served on active duty with a branch of the military. Results for male graduates and male dropouts are displayed in figure 3.

Fig. 3 Percentages of 1980 high school sophomore males who reported ever being in the military, by status as graduate or dropout: Spring 1984



In general, high school graduates were much more likely to have served in the military than were dropouts. Considering the fact that the graduates also greatly outnumber the dropouts, the military by and large is attracting a relatively small number of dropouts.

Among the various subgroups, the patterns generally were not the same for graduates and dropouts. For instance, among graduates the rate of participation was highest for blacks, but among dropouts, there was little difference across racial groups. Furthermore, among graduates the general and vocational program students were more likely to enter the military than were the academic program students. Among dropouts, the pattern was just the reverse--academic program students were much more likely to have served in the military.

For both graduates and dropouts, there was a tendency for students of lower socioeconomic levels to enter the military at higher rates. This pattern was not as pronounced, however, among the dropouts.

III. EDUCATION

Two years after high school, education was still a major activity of the 1980 sophomores. A small portion of the dropouts had returned to school to receive their equivalent diploma (GED), and more than half the graduates had gone on to some form of postsecondary education. This chapter will examine the return of the dropouts to school and will characterize for the graduates the kinds of schools attended, the major fields of study chosen, and the methods used to finance postsecondary education.

Returning for an Equivalent Diploma

At the time of the first follow-up survey in February 1982, it was determined that 17 percent of the 1980 sophomore class did not remain in school until the end of their senior year. Whether these students obtain an equivalent diploma later on is an important question. The second follow-up survey as well as the High School Transcripts Survey (1982) provide some answers. Table 3 reveals that most of those students (77 percent) who had not graduated in June 1982 were still without diploma in February 1984. Eighteen percent of the dropouts obtained their diploma by February 1983, and 5 percent obtained it by February 1984.

The groups which were most likely to return for their diploma were the students whose test scores fell in the highest quartile, and students who were classified in the highest socioeconomic (SES) quartile. Fifty-two percent of the high test quartile dropouts obtained their diploma by February 1984, compared to only 11 percent of the lowest test quartile. Also

Table 3. Percentages of 1980 high school sophomores who dropped out of school and later obtained a high school equivalent diploma by specified dates, and percentages who did not receive a high school diploma, by selected background characteristics: February 1984.[a]

Characteristics	Total			Male			Female		
	By 2/83	Between 3/83-2/84	No diploma	By 2/83	Between 3/83-2/84	No diploma	By 2/83	Between 3/83-2/84	No diploma
Total population	18	5	77	17	6	77	19	4	76
Race/ethnicity:									
Hispanic	16	3	81	18	3	79	14	3	83
Black	18	5	85	12	4	85	8	6	86
White	22	6	72	28	7	73	24	5	71
H.S. test quartile:									
4th quartile high	45	7	48	39	6	55	53	8	39
3rd quartile	31	10	59	26	12	62	37	8	55
2nd quartile	24	6	70	24	7	70	25	5	70
1st quartile low	8	3	89	7	3	90	9	3	88
H.S. geographic region:									
East	22	4	74	21	4	75	25	4	71
North	15	6	79	12	6	82	18	6	75
South	18	6	76	19	6	74	17	5	79
West	18	4	78	16	6	78	21	2	77
SES quartile:									
4th quartile high	25	8	67	25	9	66	25	6	69
3rd quartile	30	7	62	27	9	64	34	6	60
2nd quartile	19	7	74	17	9	74	21	5	74
1st quartile low	15	5	81	16	4	80	13	5	81

[a]This table includes all 1980 sophomores who did not graduate in June 1982.

females in the highest test quartile were more likely than males to obtain a diploma.

Although it was not as influential as test quartile, socioeconomic status appeared to be a related to whether or not a student would return for his or her diploma. Thirty-three percent of students in the highest quartile received their diploma, whereas only 20 percent of the lowest quartile did so. This pattern was about the same for males and females.

Postsecondary Education Enrollment

Over half the 1980 sophomores had enrolled in some form of postsecondary education by Spring 1984 (table 4). This included colleges and universities, trade schools, business schools, technical institutes, vocational schools, and community colleges. Females were more likely than males to pursue further education (60 percent compared to 51 percent). Also, there were considerable differences among the three racial/ethnic groups. Compared to whites, ten percent fewer blacks and 14 percent fewer Hispanics decided to continue their education after high school. In fact, Hispanics had the lowest rate of enrollment of all subgroups.

Some of these differences disappear, however, when the data are examined by test quartile. Comparing males and females in the highest test quartile, for instance, reveals that about the same percentage in each group went on for further education after high school. Similarly, blacks, Hispanics, and whites in the two highest test quartiles were about equally likely to enroll in postsecondary education. This implies that racial/ethnic

Table 4. Percentages of 1980 high school sophomores[a] who, as of spring 1984, had ever enrolled in postsecondary education, by selected background characteristics.[b]

Characteristics	Total	Sex		Race/ethnicity			High school program		
		Male	Female	Hispanic	Black	White	General	Academic	Vocational
Total population	56	51	60	45	49	59	44	80	35
H.S. test quartile:									
4th quartile high	88	87	89	89	85	88	76	92	65
3rd quartile	63	58	69	68	68	63	54	79	45
2nd quartile	45	37	53	53	57	42	39	66	36
1st quartile low	29	23	34	26	36	24	27	45	25
H.S. program:									
General	44	40	48	48	41	45	44	NA	NA
Academic	80	78	81	72	66	82	NA	80	NA
Vocational	35	30	41	31	38	36	NA	NA	35
SES quartile:									
4th quartile high	84	80	88	77	77	84	72	92	57
3rd quartile	65	59	71	56	66	65	55	83	42
2nd quartile	49	44	54	47	53	49	41	69	35
1st quartile low	36	30	40	30	42	32	30	56	28

[a]Includes graduates and dropouts.

[b]Postsecondary education includes colleges and universities, graduate and professional schools, service academies and schools, business schools, trade schools, technical institutes, vocational schools and community colleges.

differences are not as important in predicting participation in postsecondary education as is ability (as measured by test quartile). However, high school program appears to be the strongest determinant of enrollment in postsecondary education. Comparing students in different high school programs within the test quartile did not significantly diminish the influence of high school program on postsecondary school attendance. In other words, even when students were of comparable ability, a higher proportion of the academic program students than general and vocational program students went on for further education.

When high school program was examined on its own, it was found to be consistently related to enrollment in postsecondary for the total population, for both males and females, and for all racial groups. Not following an academic curriculum greatly reduces the likelihood of attending a postsecondary school.

The influence of socioeconomic status was similar to that of test quartile. The higher the status, the more likely it was that students would obtain further schooling. It is interesting that differences among the racial groups diminished in the highest SES group just as they did in the highest test quartile group. In other words, high SES whites, blacks, and Hispanics were fairly similar in their inclination to attend postsecondary education. In the lowest two quartiles, a different pattern emerged. The proportion of blacks and Hispanics from the lowest two test quartiles was higher than that for whites. This suggests that minorities continue to rely on education as a means for improving their standing in society.

Major Field of Postsecondary Study

For any school attended, the 1980 sophomores were asked to indicate what field of study they had chosen. The next three tables detail the field of study for students in 4-year schools, 2-year schools, and vocational schools. Because they do not include high school dropouts, the tables are titled "1982 Seniors".

In 4-year schools (table 5) students were most likely to choose business as a field of study (23 percent). The second and third most popular fields were humanities (15 percent) and social science (12 percent). By adding the biological and physical sciences to humanities (literature, history, foreigh language, psychology, and arts and architecture) and social science, it is possible to approximate the proportion of students in liberal arts, which is 35 percent. Consequently, about one quarter of the 4-year college students were in business and a little over one third were in a liberal arts curriculum. The rest of the students were divided among engineering, health, education, computer science, pre-professional programs, and other fields.

High school grades did not appear to make a big difference either. The exceptions at the two extremes were engineering, which drew a disproportionate percentage of A students (15 percent compared to 9 percent overall), and business, which was less likely to draw A students (18 percent compared to 23 percent overall.)

Table 5. Percentages of 1982 high school seniors[a] attending a 4-year college who were in specified fields of study, by selected student characteristics: October 1983.[a]

Characteristics	Humanities	Biolog. science	Physical science	Social science	Business	Educ-cation	Engi-neering	Computer science	Health	Pre-profes-sional	Voca-tional	Other fields
Total population	15	4	4	12	23	8	9	6	8	2	5	3
H.S. grades:												
A, 90-100	13	5	8	7	18	8	15	9	10	2	3	2
A & B, 85-89	14	4	5	11	22	8	11	7	9	2	6	3
B, 80-84	17	4	3	15	23	8	9	5	7	2	5	3
B & C, 75-79	15	3	4	13	26	10	6	5	7	1	6	4
C, 70-74	18	2	1	17	24	8	4	6	5	2	9	5
C & D, 65-69	12	8	0	10	33	5	2	4	4	7	9	6
H.S. type:												
Public	15	4	4	11	23	9	10	6	8	2	6	3
Total private	18	3	4	19	23	6	6	6	6	2	5	2
SES quartile:												
4th quartile high	17	5	5	16	23	7	9	4	6	2	4	2
3rd quartile	15	3	5	8	22	10	9	7	9	2	7	4
2nd quartile	13	4	2	9	23	8	10	10	9	1	8	4
1st quartile low	12	4	2	11	27	9	6	7	10	3	4	6
H.S. course pattern--mathematics:												
Concentration	10	6	7	14	18	4	17	9	7	3	4	1
4-year college-bound	15	4	4	12	25	9	7	6	9	2	5	3
General math studies	19	3	0	15	26	12	3	2	5	1	8	5
Limited or none	35	8	0	6	7	5	6	1	2	6	10	6
H.S. course pattern--science:												
Concentration	11	8	8	12	13	4	19	11	8	3	4	1
4-year college-bound	15	4	3	14	25	8	7	5	10	1	5	3
General sci. studies	19	2	1	13	31	12	2	4	5	1	6	5
Limited or none	20	0	0	15	25	10	4	7	4	4	12	0
IRT gain score--mathematics:												
4th quartile high	12	5	6	12	23	5	13	8	7	2	5	3
3rd quartile	18	3	2	13	26	11	5	4	9	1	5	3
2nd quartile	19	3	0	13	21	13	5	5	8	1	4	7
1st quartile low	16	3	5	11	24	11	7	5	8	2	6	2
IRT gain score--reading:												
4th quartile high	16	4	3	13	22	8	10	8	7	1	4	3
3rd quartile	14	6	3	13	24	11	7	3	7	1	6	5
2nd quartile	15	2	4	10	27	8	8	6	10	1	6	2
1st quartile low	14	3	5	12	23	8	8	7	8	3	5	4

[a]This table includes respondents who graduated in June 1982 or received an equivalent diploma by spring 1984.

Neither was social class an influential factor in choice of major field. Students from the four SES levels were about equally likely to choose each field, and, with few exceptions, the proportion of students in each socioeconomic level choosing a particular field was close to the overall percentages.

Of all the factors presented in table 5, students' coursework patterns appear to be most strongly associated with field of study. For instance, students whose transcripts indicated a concentration in mathematics were less likely to choose humanities and more likely to choose engineering. Only 10 percent of the math concentrators chose humanities, compared to 15 percent for the total. Seventeen percent of mathematics concentrators studied engineering and 18 percent studied business, fields selected by 8 and 23 percent of students in general. (Students who took more advanced mathematics than the normal college bound pattern were classified as concentrators.)

Similarly, students who were science concentrators were more inclined to study biological science, physical science, engineering, and computer science than were other students. They were less likely to choose business or education as a field of study.

Further evidence of the influence of high school coursework is provided by the fact that only 8 percent of the vocational concentrators attended a 4-year college or university at all, whereas 63 percent of the vocational samplers attended (not shown in table). The latter are students who had four or less credits in high school vocational courses.

Although the pattern is not universal, there appeared to be a clear tendency for student interests to persist beyond high school. Perhaps as a result of the combination of interests, aptitude, and environmental influences, many students continued to study fields similar to those in which they had concentrated during high school.

Choice of field was also broken down by quartile in IRT Gain Scores. These scores were produced by rescoring the HS&B tests using Item Response Theory (IRT) methods. Since the sophomores took the test in both the base year and first follow-up surveys, it was possible to determine a gain score for each participant. Gain scores were then assigned to quartiles, with those making the most gain in the highest quartile, and those making the least gain in the lowest. Only mathematics and reading scores are shown in table 5; however, quartiles for IRT gain scores in writing, science, and vocabulary are available on the tabulations database at CS.

Generally, differences among test quartiles were not dramatic. There was a tendency, however, for high mathematics scorers to be a little less likely to enter humanities and education and more likely to choose engineering and computer science.

The current national interest in the recruitment and training of teachers warrants a few words on the kinds of students who chose education as their field of study. In terms of test quartile, education students were a little more likely to come from the second quartile in mathematics (13 percent) and third quartile in reading (11 percent). They also were more likely to

be students who had a general mathematics and general science background (12 percent each). In other words, education tended to be chosen by students of middle ability and by students who did not have strong mathematics and science backgrounds in high school. This does not mean that high performers avoided education completely; they were just less likely to pursue it and were more likely to choose other fields.

Table 6 presents the same kind of information for students attending two-year schools. As would be expected, 2-year school attendees have a more job oriented focus. The most frequently mentioned field of study was business (27 percent), followed by humanities (15 percent), and vocational studies (14 percent). Compared to students attending 4-year schools, 9 percent more 2-year students chose a vocational field; 3 percent more selected computer science, and 2 percent more indicated health. Also, the percentages choosing the sciences and social science were lower.

High school grades had very little influence as well. It is important to recognize that the proportion of students who received mostly A's in high school and who also attended a 2-year school was very small (2 percent--not shown in the table). Although there were no strong relationships between grade and field of study, a few modest patterns were noted. Students who earned mostly B's in high school were somewhat more likely to study computer science; A and B students were more likely than other students to choose health; and C students were most inclined to choose a vocational field.

Table 6. Percentages of 1982 high school seniors attending a two-year college who were in specified fields of study, by selected student characteristics: October 1985.*

Characteristics	Humanities	Biolog. science	Physical science	Social science	Business	Education	Engineering	Computer science	Health	Pre-professional	Vocational	Other fields
Total population	15	1	1	4	27	8	5	9	10	1	14	5
H.S. grades:												
A, 90-100	8	0	0	0	35	14	8	17	2	4	6	6
A & B, 85-89	12	2	1	3	29	8	5	5	17	2	11	5
B, 80-84	16	1	0	5	24	10	7	11	10	0	13	4
B & C, 75-79	15	1	1	4	28	8	4	8	9	0	17	6
C, 70-74	18	1	1	4	27	4	6	10	9	1	13	6
C & D, 65-69	13	1	0	0	28	10	0	10	10	0	23	4
H.S. type:												
Public	15	1	1	4	27	8	6	9	10	1	14	6
Total private	19	0	1	6	34	6	3	6	11	0	10	3
SES quartile:												
4th quartile high	19	1	2	4	27	7	5	7	8	2	15	5
3rd quartile	15	1	0	4	26	10	6	8	10	0	14	5
2nd quartile	11	1	0	4	31	7	6	9	9	0	14	8
1st quartile low	15	1	0	5	27	6	3	14	12	1	13	2
H.S. course pattern--vocational:												
Concentration	7	0	1	2	37	5	5	10	9	0	20	3
Limited concentration	15	1	1	4	29	8	5	8	8	0	15	7
Sampler	16	2	0	5	25	10	5	9	11	1	12	6
Limited or none	25	0	1	8	13	10	14	7	11	0	7	4
IRT gain score--mathematics:												
4th quartile high	15	1	1	5	26	7	9	10	8	0	14	3
3rd quartile	17	0	1	5	24	7	7	9	11	0	11	8
2nd quartile	16	0	0	3	31	9	5	9	8	0	14	5
1st quartile low	16	0	1	4	26	11	4	4	13	1	15	6
IRT gain score--vocabulary:												
4th quartile high	14	0	1	4	30	8	7	10	8	1	11	5
3rd quartile	17	1	1	7	27	6	6	9	9	0	13	5
2nd quartile	18	1	1	3	21	10	8	6	13	0	15	5
1st quartile low	15	0	0	3	29	9	5	5	10	1	16	6

[a]This table includes respondents who graduated in June 1982 or received an equivalent diploma by spring 1984.

As was the case for 4-year schools, there was little relationship between socioeconomic status and field of study. Students from all socioeconomic levels were just about as likely to choose each field.

Vocational courses taken during high school seemed to have some influence on field of study. Vocational concentrators were more likely than students who took fewer vocational courses to select business, and they were also more likely to choose a vocational field.

There appeared to be little relationship between the test quartile in which the student's gain score fell and the field of study that he or she eventually chose. Students from all test score levels were about equally likely to choose all fields.

The fields of study chosen by students who attended postsecondary vocational schools are shown in table 7. Predictably, the largest proportion of students were studying vocational fields, followed by business and other fields. The two other fields most frequently mentioned were health (11 percent) and computer science (8 percent). No students indicated biological or physical sciences.

Owing to the small sample sizes, only a few independent variables are shown. Academic program students were just as likely as vocational program students to select business as a field of study. However, academic students were less likely to choose a vocational field. In terms of test performance, business students came disproportionately from the second lowest quartile on both the mathematics and vocabulary tests. Students whose gain scores were in the upper two quartiles on the mathematics test

Table 7. Percentages of 1982 high school seniors[a] attending a vocational school who were in specified fields of study, by selected student characteristics: October 1983.*

Characteristics	Humanities	Business	Engineering	Computer science	Health	Trade & Industrial	Other fields
Total population	4	23	3	8	11	35	15
H.S. program:							
General	2	13	4	7	14	42	18
Academic	7	27	3	12	11	26	12
Vocational	4	28	2	7	9	41	18
IRT gain score--mathematics:							
4th quartile high	6	18	5	9	18	35	7
3rd quartile	6	17	2	7	16	34	15
2nd quartile	4	36	2	6	3	29	19
1st quartile low	4	25	2	13	8	38	9
IRT gain score--vocabulary:							
4th quartile high	2	28	2	15	21	35	5
3rd quartile	8	28	1	6	7	35	28
2nd quartile	18	31	5	9	11	26	9
1st quartile low	8	24	4	7	7	41	15

[a]This table includes respondents who graduated in June 1982 or received an equivalent diploma by spring 1984.

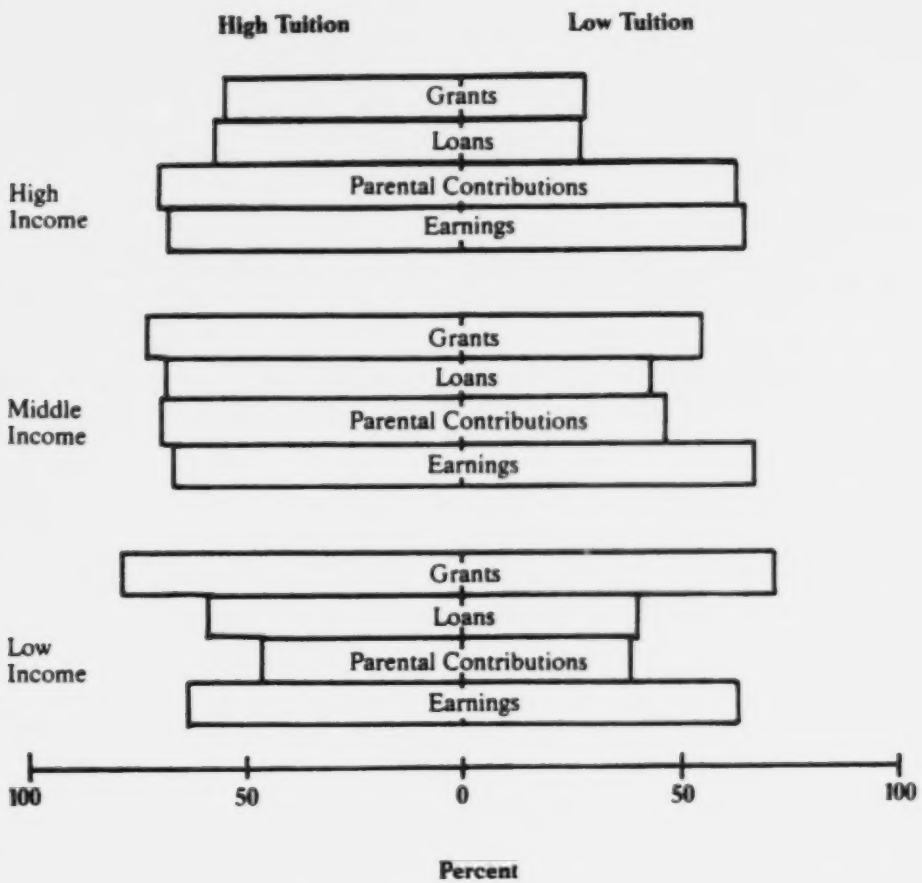
were more likely than others to select a health field, and health and computer science drew higher proportions of the highest quartile in vocabulary performance.

Financing Postsecondary Education

One of the major concerns of CS's longitudinal studies program, both High School and Beyond, and its predecessor, the National Longitudinal Study of the Class of 1972, has been financing of postsecondary education. Follow-up surveys of high school students offer an opportunity to learn about how students pay for the education they receive after high school. Figure 4 displays the percentages of students using grants, loans, parental assistance, and their own earnings to pay for their education. The data have been organized to allow comparison of the percentages of students using various financing mechanisms according to several combinations of family income and tuition levels.

The pattern generally indicates that the highest rates of use of all forms (except grants) occurred among middle income students attending high tuition schools. Lower levels of use were found among students from higher and lower income groups attending low tuition schools. With respect to grants, the highest reported use was the 79 percent rate among students who attended high tuition schools but came from low income families. The lowest proportion was 29 percent, which was for students attending low tuition schools whose families were considered high income.

Fig. 4 Percentages of students in 4-year colleges and universities financing their education through grants, loans, parental contributions, and earnings, by tuition level and family income: October 1983



Hence, higher cost and lower income were both associated with highest use. In other words, it appears that grants generally were awarded to those students who needed them the most.

The highest proportions of students using loans were those who were attending high tuition schools. Students attending high tuition schools who came from middle income families reported the highest use of loans--67 percent. However, relatively small numbers of middle and low income students attended high tuition schools. Therefore, once sampling error was accounted for, there were no significant difference between middle and low income students in the percentage receiving loans. The lowest incidence of using loans was 26 percent, which was among low tuition-high income students. Again, there was an inherent logic to the pattern. Generally, those students who faced the highest costs but had the least resources were most likely to borrow money for school.

Use of parental assistance was consistent with that of loans and grants. The highest percentages indicating they had received assistance from parents were high tuition-high income students (70 percent) and high tuition-middle income students (68 percent). The lowest proportion receiving parental assistance were low tuition-low income students (38 percent). Those who faced higher costs and whose families had greater ability to pay were more likely to receive aid from their parents than those who attended lower cost schools and came from lower income families.

Respondents could also indicate whether they contributed their own earnings toward the cost of their education. It is significant that about two thirds in all tuition-income categories indicated they did so. The degree to which students varied in the amount of earnings they contributed could be determined by further analysis.

IV. LABOR FORCE PARTICIPATION

Two years after high school about two thirds of the 1980 sophomores were working either full-time or part-time. This chapter provides an overview of the proportion employed, their earnings, and the types of jobs they held. In addition, comparisons are drawn between the graduates and the dropouts as they entered the world of work.

Employment Status and Earnings

As of October 1983, which was one year and a half after graduation, about two thirds of the sophomore cohort members were employed full-time or part-time. They worked an average of 19 hours per week and earned an average hourly pay of nearly four dollars (see table 8).

The proportion of dropouts who were employed was about 13 percentage points below that of the graduates. However, dropouts fared surprisingly well in average hourly wage, which was comparable to that of the graduates. Perhaps at age 20 neither the dropouts nor the graduates had been part of the labor force long enough for the disparity between their educational attainment to have much effect on earnings. The next follow-up survey of this cohort will ascertain whether the dropouts maintain their equality with graduates or whether they slip behind.

The employment rate for young women was somewhat below that for men among the total sophomore cohort and among high school graduates. The disparity between men and women was greater among dropouts, where the employment of women was only half that for men. Considering that a higher percentage of females reported

Table 8. Percentages of 1980 high school sophomores who, as of spring 1984, were employed and hours and earnings of those employed, by selected background characteristics.[a]

Characteristics	Total			High school graduates			Dropouts		
	Working	Average wage	Average hours	Working	Average wage	Average hours	Working	Average wage	Average hours
Total population	67	3.98	18.7	68	3.95	18.1	55	4.36	25.8
Sex:									
Male	71	4.31	20.8	71	4.27	19.3	72	4.59	25.6
Female	62	3.61	17.2	65	3.68	16.9	36	3.81	23.6
Race/ethnicity:									
Hispanic	64	4.84	18.7	68	3.99	17.9	58	4.38	23.8
Black	52	3.86	17.8	54	3.88	17.8	43	4.38	18.6
White	78	3.99	18.9	78	3.96	18.3	61	4.38	26.8
U.S. geographic region:									
East	67	3.85	18.4	68	3.78	17.6	57	4.74	29.6
North	68	3.81	18.4	69	3.88	18.1	57	3.97	21.3
South	64	4.84	19.4	66	4.81	18.7	51	4.33	26.9
West	68	4.33	18.2	69	4.38	17.7	59	4.59	23.8

[a]This table includes both graduates and dropouts.

being married and having children (table 1 and figure 2), the lower employment rate for females is not surprising. The large discrepancy in employment rate between male and female dropouts is probably related to the high percentage of female dropouts with children (56 percent according to figure 2).

The average hours worked per week was similar for men and women. However, the average rate of pay was not the same. Across all groups, women earned about 84 percent of the men's wage rate. This shows much less discrepancy between the sexes than is often reported in census and labor studies. It is important to realize that the High School and Beyond sophomore sample is basically a single age cohort. Other surveys that include a broader range of age groups may not find comparable results regarding wage rates for men and women. It will be important to learn from future surveys whether the differences between wage rates increase or stay the same.

Generally whites had the highest employment rate, followed by Hispanics and then blacks. This pattern held across both high school graduates and dropouts. The highest rate of employment was 70 percent for white high school graduates and the lowest was 43 percent for black dropouts. Pay rates for the three groups were comparable, and their average number of hours worked was similar, except for black dropouts, who worked somewhat fewer hours. It appears that the differences between the races in employment rose chiefly at the point of getting a job. Once employment was obtained, pay and hours worked were more comparable.

Types of Jobs

Table 9 displays the types of jobs held by members of the 1980 sophomore cohort who were working 35 or more hours a week, a year and a half after high school. The highest proportion of respondents were in clerical jobs (23 percent) and service jobs (22 percent). (The latter includes food service workers, janitors, waiters, health aids, orderlies, airline stewardesses, porters, elevator operators, hair dressers, firemen and policemen, and many other jobs.) Sales was the job category chosen least often--by less than 1 percent.

Traditional sex roles were apparent in the types of jobs held by men and women. Almost half the women (44 percent) were in clerical jobs, compared to only 8 percent of the men. Men were more likely than women to be engaged as craftsmen, transport workers, laborers, and farmers. Women were more likely to be in the service sector.

The proportion of each racial group working in the various categories was fairly close to the national average. One exception was that blacks were less likely to be engaged as craftsmen (painters, roofers, carpenters, upholsterers, mechanics, etc.) and more likely to be in the service sector.

As would be expected, there were some differences in the types of jobs held by high school graduates and dropouts. Two kinds of dropouts are shown in table 9--those who did not graduate but later returned to school and those who did not graduate and never returned for a diploma. Generally the dropouts were less likely to be in professional-technical,

Table 9. Percentages of 1980 high school sophomores who were employed in specified job categories, by selected background characteristics: October 1985[a]

Characteristics	Profess./ Technical	Admin./ Managemt.	Sales	Clerical	Craftsman	Operators	Transport	Laborers	Farmers	Service
Total population	4	5	8	23	14	12	3	13	4	22
Sex:										
Male	4	5	8	8	23	14	5	28	5	16
Female	4	4	1	44	2	10	1	3	1	30
Race/ethnicity:										
Hispanic	4	2	8	25	19	16	4	11	2	17
Black	2	4	8	23	7	14	2	14	1	33
White	4	5	1	23	14	12	3	13	4	21
H.S. Diploma										
Diploma, never left	4	5	8	25	13	12	3	12	4	22
Diploma, returned	5	6	2	12	28	12	5	13	2	25
No diploma, returned	1	8	1	7	16	18	4	23	2	37
Never returned	1	1	8	18	19	28	3	28	2	23
H.S. test quartile:										
4th quartile high	8	5	1	22	11	11	4	12	4	22
3rd quartile	4	6	1	38	13	9	3	12	4	19
2nd quartile	3	5	1	22	14	13	4	12	4	22
1st quartile low	1	2	8	17	17	17	3	15	2	25
H.S. program:										
General	2	4	8	19	15	14	4	15	4	24
Academic	6	7	8	26	11	10	3	11	3	23
Vocational	3	3	1	23	16	14	3	13	3	21
H.S. geographic region:										
East	5	5	1	23	14	12	2	12	3	22
North	3	4	8	19	13	13	3	12	6	26
South	3	4	8	24	15	14	3	16	2	28
West	4	5	8	26	14	10	6	12	2	21

[a]This table includes both graduates and dropouts who were working 36 or more hours per week.

administrative-management, and clerical jobs. They were disproportionately represented, however, in the operator and laborer categories.

Persons from all four test quartiles had jobs in all categories, and there seemed to be no clear association between test quartile and type of job held. Nevertheless, a few patterns are worth noting. High test quartile students were more likely than students in the other quartiles to be in jobs classified as professional-technical or administrative-management. Low test quartile students were more likely to hold jobs as craftsmen, operators (machine operators, furnace workers, meat cutters, mine operatives, etc.), laborers, and service workers. Students in the second highest quartile were more likely than others to hold a clerical job.

Individuals who were in an academic program during high school were somewhat more likely to be in professional-technical or administrative-management jobs, and they were less likely than persons who had been in a vocational or general program to be craftsmen or operators. For most of the job categories, however, there were few differences among persons from different high school programs.

V. EXPERIENCES AND ATTITUDES

Previous chapters have discussed the major life activities of the 1980 sophomore cohort in the areas of work, family formation, and education. In this section, additional experiences and attitudes are examined as they relate to living in an increasingly technological society and making personal and societal choices.

Use of Electronic Equipment

Computer education has been in existence for at least the last decade and has been implemented in varying degrees among school districts across the nation. Computers have come to play an increasingly large role in the workplace and even in the home. The second follow-up survey provided an opportunity to find out whether young people had received much exposure to computer equipment and software either while in school or afterwards. Table 10 displays the results for computer equipment.

A little over half the 1980 sophomores who graduated from high school reported experience with a computer terminal. About one quarter indicated familiarity with microcomputers, minicomputers, mainframes, and word processors. Hence, sizeable numbers of the sophomore cohort gained some computer experience either while they were in high school or after leaving it. While these numbers are large, they obviously fall far short of universal exposure to computers, which is a goal recently advocated by some groups, including the National Commission on Excellence in Education (Nation at Risk, 1983). These data suggest that, at least for the high school class of

Table 10. Percentages of 1980 high school sophomores graduating by spring 1984, who had ever used specified types of computer and electronic equipment, by selected background characteristics.[a]

Characteristics	Computer terminal	Micro-computer	Mini-computer	Mainframe	Word processor
Total population	51	26	23	25	23
Sex:					
Male	50	31	25	26	20
Female	52	21	21	24	26
Race/ethnicity:					
Hispanic	39	16	19	21	23
Amer.Ind/Al.Nat	32	24	18	16	16
Asian/Pac.Islander	63	30	30	34	21
Black	41	16	20	22	24
White	54	28	23	26	23
H.S. test quartile:					
4th quartile high	74	45	30	36	28
3rd quartile	54	25	25	25	23
2nd quartile	41	18	19	21	20
1st quartile low	28	10	14	15	19
H.S. program:					
General	41	19	19	21	18
Academic	65	35	28	32	27
Vocational	38	16	18	19	22
SES quartile:					
4th quartile high	67	41	29	34	29
3rd quartile	55	28	25	27	24
2nd quartile	47	21	22	24	21
1st quartile low	34	12	14	16	18

[a]This table includes respondents who graduated in June 1982 or received an equivalent diploma by spring 1984.

1982, universal exposure is not the norm, and requirements may be needed to encourage more students to become familiar with computers.

About the same proportion of males and females had experience with computer terminals. Beyond this, the sexes had somewhat different experiences. Young men were more likely to be familiar with microcomputers and minicomputers, and females were more likely to have experience with word processors.

Racial differences also were evident. Asians were the most likely to have experience with all kinds of computer equipment, followed by whites. Hispanics, American Indian/Alaskan Natives, and blacks were less likely to have had exposure to computer terminals, microcomputers, and minicomputers. For instance, 63 percent of Asian/Pacific Islanders and 54 percent of whites, compared to 32 percent of American Indian/Alaskan Natives, 39 percent of Hispanics, and 41 percent of blacks, had used a computer terminal. Exposure to word processors was about the same for all five groups. It is difficult to assess the implications of the differences in the level of experience with computer equipment. It is possible, however, that persons with less computer experience will be at a disadvantage in a workplace that is becoming more and more computerized.

The reported rates of use of computer software packages by the 1982 seniors are much lower than those for hardware (table 11). In the total population, use of these packages ranged from 10 percent for word processing and educational software to only 2 percent for statistical software packages. Four percent

Table 11. Percentages of 1980 high school sophomores graduating by spring 1984 who had ever used specific types of computer software packages, by selected background characteristics.[a]

Characteristics	Statistical packages	Business applications	Word processing	Database software	Educational software
Total population	2	7	10	4	10
Sex:					
Male	3	7	8	4	11
Female	2	8	11	4	9
Race/ethnicity:					
Hispanic	3	6	7	4	7
Native American	1	7	6	1	8
Asian	5	6	11	4	16
Black	2	7	8	5	7
White	2	8	10	4	11
Other	9	2	5	2	12
H.S. test quartile:					
4th quartile high	5	10	15	6	17
3rd quartile	2	7	9	5	11
2nd quartile	1	6	8	4	6
1st quartile low	1	5	5	3	5
H.S. geographic region:					
East	3	8	11	3	10
North	2	7	9	4	12
South	2	7	8	5	8
West	2	7	12	5	11
SES quartile:					
4th quartile high	4	9	15	6	17
3rd quartile	2	9	10	4	11
2nd quartile	2	7	8	4	8
1st quartile low	1	4	6	3	5
PSE type and status (2/84):					
Part-time priv. 4-yr.	2	9	4	12	7
Part-time pub. 4-yr.	5	10	12	7	13
Part-time pub. 2-yr.	2	14	14	7	12
Part-time other	2	9	14	6	7
Full-time priv. 4-yr.	6	11	21	7	17
Full-time pub. 4-yr.	4	8	12	5	16
Full-time pub. 2-yr.	3	8	12	6	16
Full-time other	2	7	15	7	15
Non-student	1	6	6	3	6

[a]This table includes respondents who graduated in June 1982 or received an equivalent diploma by spring 1984.

reported being familiar with data base software, and 7 percent had used business applications software.

Asian/Pacific Islanders were the most likely of the various racial/ethnic groups to have used statistical or educational software. Asian/Pacific Islanders and whites were the most frequent users of word processing software. Hispanics, American Indian/Alaskan Natives and blacks were least likely to report use of word processing and educational software. Differences among the races were not as evident in the use of statistical packages, business applications, and data base software.

Use of all kinds of software increased with both test quartile and socioeconomic level. The higher the test quartile and the higher the socioeconomic level, the more likely it was that the individual had used any of the computer software packages listed.

Comparing respondents in various postsecondary education types and statuses reveals that non-students generally were less likely to have used any of these software packages. Full- and part-time students in public universities and full-time students in private 4-year universities were slightly more likely to make use of statistical packages. A relatively high proportion (21 percent) of full-time students at private 4-year universities reported use of word processing programs. This was the highest percentage reported by the total population or any single subgroup for any of the packages mentioned.

Voting Behavior

By the time of the second follow-up survey, the 1980 high school sophomores were about 20 years old and therefore old enough to vote. They were asked whether they had registered for a local, state, or national election and whether they had voted in a local, state, or national election. Tables 12 and 13 summarize the results for the 1980 sophomores who graduated from high school.

Overall, 55 percent (not shown in table) registered to vote sometime before February, 1984. Blacks and students attending 2-year and 4-year schools were most likely to have registered to vote.

There was a small but consistent tendency for registering to vote to be related to test quartile. Generally, the higher the test quartile, the higher the proportion who reported having registered to vote. This was true for the total population as well as most categories.

Those persons who had been in an academic program in high school were more likely to have registered than those who were not. This was the case for all categories: males and females, blacks, Hispanics, whites, and attendees of 2- and 4-year colleges and universities. Similarly, the tendency to register to vote rose with educational aspirations (PSE Plans). For instance, only 44 percent of those who (during high school) had no plans for postsecondary education had registered to vote, compared to 64 percent of those who intended to obtain an advanced degree. This relationship held across both sexes, all three racial groups, and among students attending 2- and 4-year postsecondary schools.

Table 12. Percentages of 1982 high school seniors who reported being registered to vote, by sex, race/ethnicity, and postsecondary education status, and by selected background characteristics.[a]

Characteristics	Total	Sex		Race/ethnicity			PSE participation		
		Male	Female	Hispanic	Black	White	Vocational	2-year college	4-year coll./univ.
H.S. program:									
General	58	53	47	51	68	49	47	57	62
Academic	61	59	63	54	65	61	54	65	67
Vocational	51	54	49	53	78	47	57	62	68
H.S. type:									
Public	55	56	54	52	65	54	51	62	67
Total private	59	55	62	56	75	58	65	68	63
SES quartile:									
4th quartile high	63	62	63	63	61	63	54	65	67
3rd quartile	58	57	58	59	67	57	49	62	66
2nd quartile	52	55	49	47	65	58	56	58	66
1st quartile low	58	51	49	49	66	43	53	61	57
H.S. test quartile:									
4th quartile high	61	59	64	53	78	61	39	62	68
3rd quartile	54	56	52	55	68	54	52	64	63
2nd quartile	51	52	50	45	66	49	52	61	64
1st quartile low	55	59	52	56	64	49	65	65	68
PSE plans:									
None	44	47	41	45	60	42	51	60	38
Vocational/technical	51	55	47	56	62	48	56	59	80
Less than 4-year degree	56	54	57	54	68	54	48	59	62
College degree	63	63	63	54	72	63	54	69	66
Advanced degree	64	63	65	59	65	65	44	62	68
H.S. geographic region:									
East	52	51	53	48	63	51	52	61	61
North	61	61	60	58	76	60	56	69	72
South	54	56	53	59	63	52	49	62	65
West	53	55	50	45	75	53	48	56	66

[a]This table includes 1980 sophomores who graduated in June 1982 or received an equivalent diploma by spring 1984.

Private school students were more likely to register to vote than public school students, and those from higher socioeconomic groups were more likely to register to vote than those from lower socioeconomic levels. This was true across most categories. Among blacks and students attending 2-year and 4-year schools, the influence of socioeconomic level was less pronounced.

The number of 1982 seniors who actually voted was much less than the number who registered. Table 13 summarizes the results for those who indicated they had voted in a local, state, or federal election. Whereas 55 percent reported registering, only 35 percent reported voting. In spite of this difference, the patterns for voting were similar to those for registering to vote. Blacks and students attending 2-year and 4-year colleges and universities were most likely to report having voted (40, 41, and 43 percent, respectively).

Academic program students were more likely to have voted than students who had been in other programs, and private school students voted at higher rates than did public school students.

Among the total population and males and females, higher socioeconomic status was associated with higher percentages voting. The relationship was not as evident for blacks and Hispanics and among 2-year and 4-year college and university students.

The data in tables 12 and 13 generally indicate that voting is an activity that is more prevalent among people who have

Table 13. Percentages of 1982 high school seniors who reported voting in a local, state, or national election, by sex, race/ethnicity, and postsecondary education status, and by selected background characteristics.[a]

Characteristics	Total	Sex		Race/ethnicity			PSE participation		
		Male	Female	Hispanic	Black	White	Vocational	2-year college	4-year coll./univ.
Total	35	35	34	30	40	35	34	41	43
H.S. program:									
General	30	32	28	26	37	30	31	36	37
Academic	40	39	40	31	40	40	35	44	44
Vocational	32	34	31	32	41	31	30	41	45
H.S. geographic region:									
East	34	31	37	28	43	33	33	43	38
North	41	43	40	36	53	41	45	49	52
South	30	32	29	31	34	30	30	37	37
West	34	35	32	26	43	36	14	38	46
H.S. type:									
Public	34	36	33	29	39	35	34	41	44
Total private	40	34	45	39	54	39	42	43	41
SES quartile:									
4th quartile high	40	42	39	39	35	41	30	46	41
3rd quartile	37	38	36	40	39	37	30	41	46
2nd quartile	34	34	34	27	42	34	46	38	47
1st quartile low	29	29	28	25	40	26	32	42	39
H.S. test quartile:									
4th quartile high	40	41	40	36	42	41	24	42	45
3rd quartile	36	36	36	31	43	36	35	43	42
2nd quartile	32	33	30	27	39	31	36	37	39
1st quartile low	32	32	31	31	30	29	42	46	39
PSE plans:									
None	25	28	21	20	28	25	19	31	21
Vocational/technical	33	35	31	39	39	32	43	40	52
Less than 4-year degree	35	34	36	29	42	35	29	40	42
College degree	41	41	40	35	43	41	33	46	43
Advanced degree	41	40	42	32	45	42	27	41	44

[a]This table includes 1980 sophomores who graduated in June 1982 or received an equivalent diploma by spring 1984.

attained some success in school or who have pursued education beyond high school. Those with higher test scores, and those who planned to attend or did attend postsecondary school all had higher rates of registering and voting. It should be recognized, however, that these tables have not controlled sufficiently for socioeconomic status and other demographic factors that may also be associated with the inclination to register to vote. Thus, more firm conclusions regarding the relationship between education and voting behavior must await further analysis.

Life Goals

Each time the sophomore cohort has been surveyed they have been asked to rate a set of life goals according to whether they were "not important," "somewhat important," or "very important." This makes it possible to track values over time to determine the degree to which they shift or remain the same. The next three tables present information on how the sophomores who graduated from high school viewed life goals in 1984 and what changes occurred during the four years between that time and the base year survey (1980).

In 1984, a mixture of work-related and family-related goals drew the highest proportion of "very important" ratings (table 14). The life goal which was chosen by the largest proportion was marrying right and having a happy family life (88 percent). Three other life goals were also rated very important by at least 80 percent. These were being successful in work, being able to find steady work, and having strong friendships. The next most important goals were having leisure time (73 percent) and giving

Table 14. Percentages of 1982 high school seniors who in spring 1984 rated specified life goals as "very important," by selected background characteristics.[a]

Characteristics	Success in work	Marriage/ family	Lots of money	Friends	Steady work	Being a community leader	Opportunities for children	Living near relatives	Moving away	Correcting inequalities	Having children	Having leisure time
Total population	86	88	28	80	85	10	71	18	10	14	50	73
Sex:												
Male	89	86	36	81	88	14	72	16	11	13	43	75
Female	84	90	21	79	83	7	70	20	9	14	56	72
Race/ethnicity:												
Hispanic	89	87	30	74	89	16	82	21	11	22	50	69
Native American	89	84	39	78	89	9	83	18	14	22	40	59
Asian	90	91	35	83	83	12	79	23	5	19	50	69
Black	91	86	30	57	93	15	92	15	15	27	39	67
White	85	88	26	84	84	9	66	18	9	11	51	75
Other	82	88	40	86	79	22	84	35	16	14	40	66
H.S. grades:												
A, 90-100	86	88	19	86	80	8	54	16	6	12	54	77
A & B, 85-89	87	90	20	85	84	10	61	15	7	12	50	75
B, 80-84	87	90	24	82	84	9	66	17	9	12	53	74
B & C, 75-79	87	89	29	80	87	10	75	19	10	15	51	72
C, 70-74	85	86	35	76	86	10	77	20	11	14	47	71
C & D, 65-69	84	84	37	75	80	13	81	21	13	15	43	73
D, 60-64	84	83	43	66	85	13	82	16	14	23	40	70
PSE plans:												
None	80	88	30	75	84	8	77	21	9	12	49	68
Vocational/tech.	86	90	29	79	80	9	70	20	11	12	50	70
LT 4-year degree	86	87	28	78	86	8	72	18	10	13	48	74
College degree	88	89	27	84	84	10	65	16	9	14	51	77
Advanced degree	91	86	28	84	83	14	63	15	9	10	51	77
H.S. geographic region:												
East	86	87	31	81	84	9	69	19	10	13	40	76
North	84	80	25	81	85	8	65	15	10	12	50	74
South	89	89	30	77	80	13	80	20	10	16	50	69
West	85	87	27	83	81	9	60	19	10	13	51	75

[a]This table includes 1980 sophomores who graduated in June 1982 or received an equivalent diploma by spring 1984.
**Low-N: Cell size is less than 25 respondents.

children better opportunities (71 percent). It is interesting that leisure time was rated very important by nearly as many persons as was being successful in work and having steady work.

These respondents appeared to give less emphasis to child-centered values: only 50 percent thought it was very important to have children. This is a much smaller proportion than that for marrying the right person and being successful in work, by 38 and 36 points, respectively, and 23 percentage points below having leisure time.

The goal with next lowest rate was having lots of money which, at 28 percent, was appreciably lower than having children. The goals that received the lowest proportion of "very important" ratings were being a leader, getting away from the current area of residence, and correcting social and economic inequalities.

Men and women were mostly within a few percentage points of each other on the life goals rated very important. There was a slight tendency for males to place more emphasis on being successful in work, finding steady work, and being a leader. One large difference was in the way having lots of money was rated--males led by 15 percentage points in saying this was very important. Women were somewhat more likely to say it was very important to marry the right person and live near parents. Women were far more likely, however, to desire children--56 percent, compared to 43 percent of men.

Ratings by the various minority racial/ethnic groups appear to reflect a continued concern with gaining economic and social equality. Many of the goals they were more likely to rate very important related to improvements that could be made in their

personal and group statuses. For instance, only 26 percent of whites thought having lots of money was important, but it was rated important by 35 to 38 percent of Hispanics, Native Americans, Asians, and blacks. Similarly, Hispanics and blacks were much more likely than whites to rate being a leader important. All minority groups placed more emphasis than whites did on giving children better opportunities. This was rated very important by 79 percent to 92 percent of the minorities, compared to 66 percent of the whites. Also, only 11 percent of whites thought it was very important to correct social and economic inequalities; but 19 to 27 percent of the minority groups considered this goal very important.

Grades earned in high school seemed to have little effect on the ratings given to most of the life goals. There were a few exceptions, however. Those who had lower grades were more likely to value having lots of money, giving children better opportunities, and living near parents; they were less likely to value having strong friendships.

Persons with different educational aspirations during high school also revealed somewhat different priorities on several of the life goals. For instance, the higher the educational aspiration, the more likely it was for respondents to indicate that success in work was important. Higher educational aspirations were also associated with placing more emphasis on having strong friendships and being a leader. Those who intended to obtain an advanced degree were most likely to say that correcting social and economic inequalities was very important.

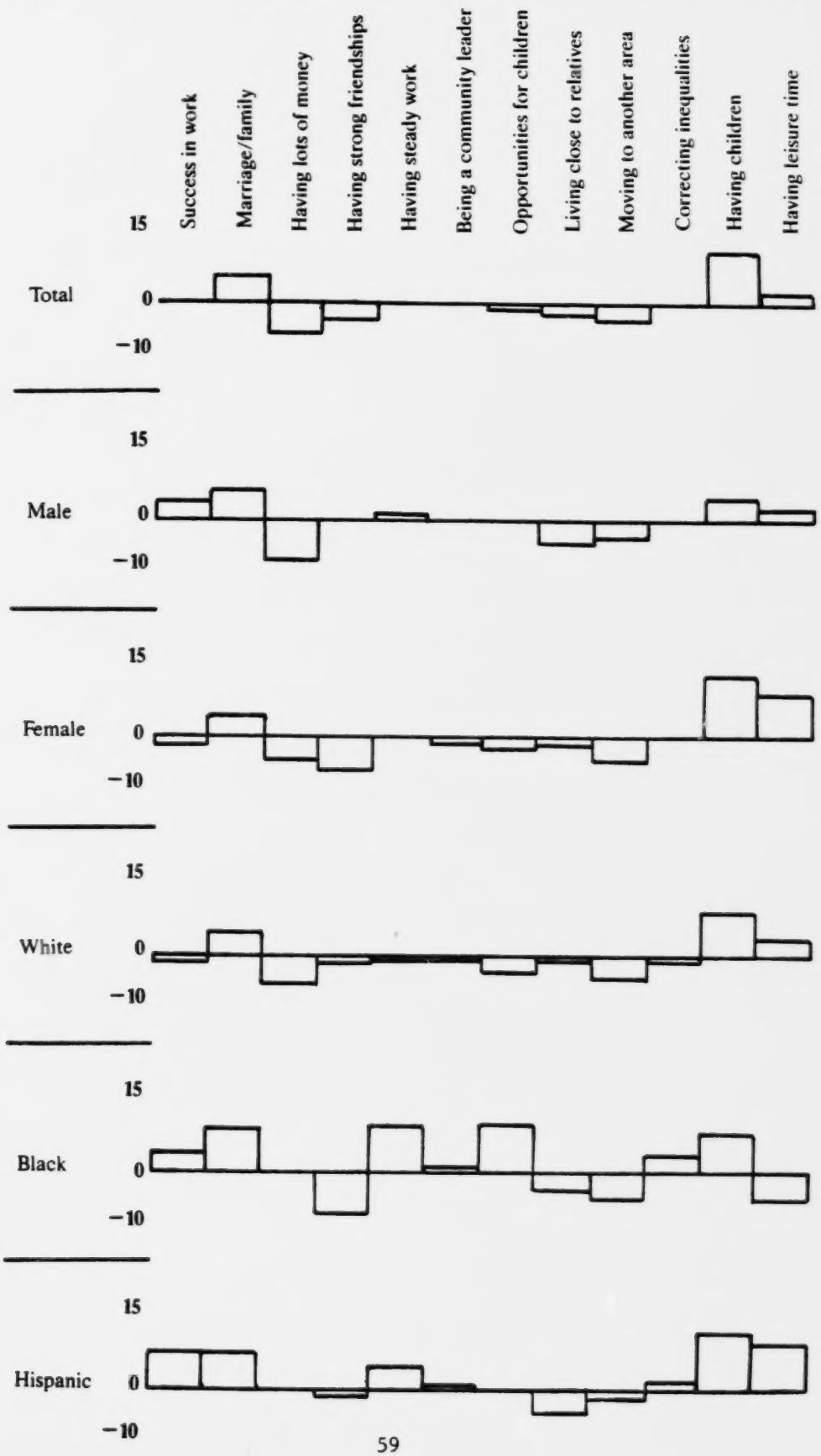
Members of the class of 1982 who had lower educational aspirations were more inclined to say that it was very important to give children better opportunities and to live near parents.

As they mature and gain more experience, it is expected that young adults will change their priorities regarding their life goals. These changes are explored in figure 5 which summarizes the responses of the 1980 sophomores who graduated from high school or obtained an equivalent diploma by 1984. The 1980 percentages have been substracted from the 1984 percentages. Hence, a positive value reflects an increase in 1984 in the percent saying a goal was very important, and a negative value signals a decrease in the 1984 percentage.

For the overall population the ratings in 1984 were remarkably similar to those in 1980. There was only a small shift in emphasis from success in work to more family-oriented goals. For instance, the rating of money as very important was 5 percentage points lower in 1984, but the percentages rating marrying right and having children grew by 4 points and 7 points, respectively.

For the subpopulations, the shifts in priorities were more noticeable. For instance, males thought success in work was more important in 1984, whereas females thought it was less important. Money was a little less important to males in 1984, and friends

Fig 5 Percent change in life goals rated "very important" between 1980 and 1984



were of less concern to females. Living near parents and relatives was not rated as highly by males in 1984, but females' ratings did not change for this goal. Both indicated more concern in 1984 for marrying right and both also thought it was more important to have children. However, the gain in the percentage of females was twice that for males (10.5 percent compared to 4.8 percent).

Success in work and finding steady work were of more concern to Hispanics and blacks in 1984 than they were in 1980, but among whites there was little change in the importance given these goals. Blacks downgraded having lots of money in 1984 more than other races (8 percent fewer thought it was very important in 1984). They also demonstrated a greater shift towards family values and continued concern over social and economic equality. For example, they showed the greatest increase in evaluations of marrying the right person, and they were the only group to increase their rating of giving children more opportunity than they had. Consistent with the seriousness of their concerns, blacks showed the greatest decrease in ratings for having strong friendships, and they were the only group to show a decrease in evaluations of having leisure time.

Although not shown in the figure, changes in life goals were similar across most regions. The South appeared to be unique, however, in the greater concern shown in 1984 for success in work and finding steady work.

As they move into adulthood, the 1980 sophomores are joining the ranks of a generation that has been characterized as achievement oriented, mobile, somewhat self-indulgent, and less

socially conscious than its predecessors. The degree to which the 1982 seniors (1980 sophomores who graduated from high school or have an equivalent diploma) have adopted the values of the young and upwardly mobile can be examined by looking at some of the life goals. Six relevant life goals have been selected and are summarized in table 15. Three of the life goals--success in work, having lots of money, and being a leader reflect achievement orientation. Living close to relatives provides a measure of familial values; and correcting social and economic inequalities taps social conscience. High ratings for having leisure time may indicate less emphasis on achievement and success.

These individuals responses to questions about life goals suggest a mixed set of values that cannot be characterized as uniquely achievement or success oriented. In fact, the ratings show some ambivalence about success. While 86 percent said work was very important, only 28 percent gave having lots of money the same rating. (Likewise only 10 percent thought that being a leader was very important.) Despite the high rating for success, 73 percent gave high marks to having leisure time.

Concern over social issues has not been a hallmark of the current young adult population, and the 1982 seniors seem to be following suit. Only 14 percent thought it was very important to correct social and economic inequalities.

It is difficult to say whether the importance attached to living near parents and relatives reveals much about family values. Only a minority (18 percent) thought this was very important, but this may not represent a value unique to this age

Table 15. Percentages of 1982 high school seniors who rated specified life goals as "very important" in spring 1984, by selected characteristics.[a]

Characteristics	Success in work	Lots of money	Being a leader	Correcting inequalities	Living near relatives	Leisure time
Total population	86	28	10	14	18	73
H.S. test quartile:						
4th quartile high	86	24	10	13	13	78
3rd quartile	87	24	8	11	17	76
2nd quartile	87	28	10	13	20	71
1st quartile low	85	39	13	19	24	64
SES quartile:						
4th quartile high	87	29	11	13	15	79
3rd quartile	88	29	9	12	18	76
2nd quartile	86	27	9	12	19	72
1st quartile low	85	27	10	17	19	65
Employment status (2/84):						
Employed	86	28	10	13	19	74
Unemployed	86	28	7	14	14	63
Not in labor force	86	29	11	15	17	73
Military service:						
Served in military	92	29	14	16	17	72
Did not serve	86	28	10	14	18	73
Parental status (2/84):						
Had children	80	25	10	15	20	60
No children	88	28	10	14	18	75
Children anticipated:						
No children anticipated	80	38	9	14	19	71
Children anticipated	87	27	10	14	18	73
PSE type and status (10/83):						
Private 4-year	89	25	13	19	13	74
Public 4-year	92	28	12	14	14	79
Other	90	30	9	13	19	77
Non-student	83	29	9	13	20	69

[a]This table includes 1980 sophomores who graduated in June 1982 or received an equivalent diploma by spring 1984.

group. Geographic mobility has been a common feature of American society, and these respondents' ratings may simply reflect the status quo.

Summarizing the overall set of life goal ratings for these 1982 seniors, they seemed to place some emphasis on achievement and success, but their ratings are inconsistent. With respect to social issues, they appear to follow the lead of other young adults in demonstrating only limited concern. Among the subgroups, there are some interesting and occasionally counter-intuitive findings. For example, those who scored in the highest test quartile placed less emphasis on having lots of money and also were less likely to say it was important to live near parents and relatives. The lowest quartile students were most likely to favor correcting social and economic inequalities.

It is interesting that those who anticipated having children were more likely than persons not planning to have children to rate success in work as very important. The positions between these two groups switched with respect to the importance of money--those who planned to have children placed less emphasis on money than those who anticipated no children.

Unlike those who only expected to have children, those who already had children placed less importance on being successful in work. Parents also were less inclined to rate having leisure time as being very important.

Comparing persons according to postsecondary education type and status reveals clear differences between students and non-students. The latter were somewhat less success oriented and somewhat more family oriented. Only 83 percent of non-students

rated success in work as very important, compared to 88 to 91 percent of students. Nineteen percent of non-students but only 13 percent of students in 4-year schools considered living close to parents and relatives very important. Finally, students were more likely than non-students to place importance on correcting social and economic inequalities (74 to 79 percent compared to 69 percent).

Appendix A

High School and Beyond Data Files Available for Public Use

BASE YEAR FILES

Language File

The Language File contains information on each student who reported some non-English language experience either during childhood or at the time of the base year survey. This file contains 11,303 records (sophomores and seniors combined), with 42 variables for each student.

Parent File

The Parent File contains questionnaire responses from the parents of about 3,600 sophomores and 3,600 seniors who are on the Student File. Each record on the Parent File contains a total of 307 variables. Data on this file include parents' aspirations and plans for their childrens postsecondary education.

Twin and Sibling File

The Twin and Sibling File contains base year responses from sampled twins and triplets; augmented data on twins and triplets of sample members; and data from siblings in the sample. This file (2,718 records) includes all of the variables that are on the HS&B student file, plus two additional variables (family ID and SETTYPE--type of twin or sibling).

Teachers' Comments File

The Sophomore Teacher File contains responses from 14,103 teachers on 18,291 students from 616 schools. The Senior Teacher File contains responses from 13,683 teachers on 17,056 students from 611 schools. At each grade level, teachers had the opportunity to answer questions about HS&B-sampled students who had been in their classes. The typical student in the sample was rated by an average of four different teachers. Preliminary analyses by CS indicate that the files contain approximately 76,000 teacher observations of sophomores and about 67,000 teacher observations of seniors.

Friends' File

The Friends' File contains identification numbers of students in the HS&B sample who were named as friends of other HS&B-sampled students. Each record contains the ID of sampled students and IDs of up to three friends. Linkages among friends can be used to investigate the sociometry of friendship structures, including reciprocity of choices among students in the sample, and for tracing friendship networks.

MERGED BASE YEAR AND FIRST FOLLOW-UP FILES

Sophomore File

The First Follow-Up Sophomore File contains responses from 29,737 students and includes both base year and first follow-up data. This file includes information on school, family, work experiences, educational and occupational aspirations, personal values, and test scores of sample participants. Students are also classified as to high school status as of 1982 (i.e., dropouts, same school, transfer, or early graduate).

Senior File

The First Follow-Up Senior File contains responses from 11,995 individuals and includes both base year and first follow-up data. This file includes information from respondents concerning their high school and postsecondary experiences and their work experiences.

OTHER FILES

Transcript File

This file describes the courses taken by 15,941 sophomores of 1980 throughout their four years of high school. Data include a six-digit course number* for each course taken, along with course credit, course grade, and year taken. Other items of information, such as grade point average, days absent, and standardized test scores, are also contained on the file.

Offerings and Enrollments File

This file contains school information, and course offerings and enrollments data, for 957 schools. Each course offered by a school is identifed by a six-digit course number.* Other information, such as credit offered by the school, is also contained on each record.

Updated School File

This file contains base year data (966 completed questionnaires) and first follow-up data (956 completed questionnaires) from the 1,015 participating schools in the HS&B sample. First follow-up data were requested only from those schools that were still in existence in spring 1982 and had members of the 1980 sophomore cohort currently enrolled. Each high school is represented by a single record that includes 230 data elements from the base year school questionnaire, if available, along with other information from sampling files (e.g., stratum codes, case weights).

*Corresponds with descriptions in A Classification of Secondary School Courses (CSSC), developed by Evaluation Technologies, Inc., under contract with CS, July 1982.

Appendix B

Classification Variables

Twenty-six major classification variables were used in this report to define subgroups for analysis, and they are described below. Table B-1 shows the composition of the second follow-up survey sample by some of these classification variables.

Sex

Student's sex was available in five survey documents. If one or more of the sources contained a valid sex code and none of the sources contained conflicting information, that sex code was used. In 857 cases either no valid sex code was found or contradictory information was provided. In these cases, the respondent's sex was determined by inspection of first names and a review of the documentation.

Race/Ethnicity

Race and ethnic origin codes were available from both base-year and first follow-up questionnaires. Persons were classified into mutually exclusive racial-ethnic groups based on the following hierarchical sequence: (1) if a Hispanic ethnic origin was indicated either year, the person was classified as Hispanic and also further identified as Mexican, Cuban, Puerto Rican, or other Hispanic; (2) if a race code American Indian or Alaskan Native was indicated either year, the person was classified as American Indian; (3) if an Asian or Pacific Islander race code was present either year, the person was classified as Asian; (4) if a race code of black was present either year, the person was classified as black; (5) if a race code of white was present either year, the person was classified as white. The 125 remaining students were identified as "other".

Socioeconomic Status (SES) Quartile

The SES index is a composite of five equally-weighted components: father's education, mother's education, family income, father's occupation, and household items. The index values are based on information provided in the first follow-up survey. Quartiles were created based on the weighted SES distribution.

Family Income

Data from parents and respondents were used to determine family income at the time of the base year survey. Three levels are presented: low, which is less than $12,000 per year; moderate, if between $12,000 and $19,999; and high, if over $20,000.

H.S. Geographic Region

Refers to the geographic region in which each sample member's high school was located. HS&B was designed to provide estimates for each of nine Census Bureau sections. In this report, some tables collapse the regions to four major regions. These regions are as follows: North--Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania; Central--Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South--Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, and Texas; West--Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii.

H.S. Urbanicity

Persons were assigned to one of three categories based on the location of the school they attended in the base year survey: urban if located in the central city of a Standard Metropolitan Statistical Area (SMSA); suburban if located in an SMSA, but outside the central city; and rural if not located in an SMSA.

H.S. Graduates and Dropouts

The sophomore cohort was divided into four categories regarding their high school diploma. In this report, high school graduates include persons in the first two categories: those who never left high school and have their high school diploma and those who left high school but returned later and obtained their diploma. Dropouts are persons in the last two categories: those who dropped out of high school, returned to school, but did not obtain the diploma; and those who dropped out of high school and never returned to school.

H.S. Program

High school curricular program was identified from the answers of sophomores during the first follow-up survey to the question "Which of the following best describes your present high school program?" The student could mark "general," "academic or college preparatory," or any of seven "vocational" (occupational preparation) areas.

H.S. Grades

Grade point average (using a 4-point scale) was computed from courses, credits, and grades shown in the high school transcript obtained as part of the 1982 High School and Beyond Transcript Survey. Grade point averages were then re-expressed as letter grades.

H.S. Test Quartile

This quartile contains the respondent's composite test score. The composite test score is the average of the standardized scores for the reading, mathematics, and vocabulary tests which were taken during the first follow-up survey.

H.S. Type

Respondent's school sample type: public or private.

Postsecondary Education (PSE) Plans

Plans for postsecondary education which were reported during the first follow-up survey.

H.S. Course Pattern--Mathematics

Pattern of mathematics coursework shown on respondents' high school transcript (obtained from the High School Transcript Study). The Concentrator earned four or more credits in mathematics, at least one of which was in analytic geometry, pure mathematics, solid geometry, analysis, calculus, mathematics 3, or statistics and probability. Four Year College Bound earned four or more credits in mathematics, one of which was earned in algebra 1,2, or 3; geometry; plane or solid geometry; trigonometry; or mathematics 1 or 2. General Math students earned one-two credits in math with less than two in the college preparatory courses. Limited or Nonparticipants earned less than one credit in math.

H.S. Course Pattern--Science

Pattern of science coursework shown on respondents' high school transcript (obtained from the High School Transcript Study). The Concentrator earned one or more credits in each of the following: biology, chemistry, and physics in addition to any credits earned in general science courses. Four Year College Bound students earned one or more credits in an advanced physical science or an advanced life science in addition to any credits earned in general life or physical sciences. General Science students earned one or more credits in general life science or general physical science and less than one credit in advanced science offerings. Limited or Nonparticipants earned less than one credit in science.

H.S. Course Pattern--Vocational

Pattern of vocational coursework shown on respondents' high school transcript (obtained from the High School Transcripts Study). The Concentrator earned four or more credits in a single vocational education program, or earned four or more credits each in multiple instructional programs (e.g., business, marketing, and the like). The Limited Concentrator earned four or more credits in vocational education but less than four in a single instructional program. The Sampler earned from a fraction of a credit to four credits in vocational education. Nonparticipants earned no credits in vocational education.

IRT Gain Scores--Mathematics, Science, Reading, Writing, Vocabulary

The tests which were taken during the base year and then repeated in the first follow-up survey were rescored using Item Response Theory methods of scoring. A gain score was computed for each case, and quartiles were constructed. These variables indicate the quartile in which students gain scores fell. Those in the highest quartile gained the most in the two years, and those in the lowest showed the least gain. Scores were obtained from the Study of Excellence in High School Education: Educational Policies, School Quality, and Student Outcomes - Psychometric Analysis, 1985 (conducted by Education Testing Service for CS, Department of Education Contract No. 300-83-0247).

Postsecondary Education (PSE) Type and Status, October 1983 and February 1984

Respondents were classified according to whether or not they were enrolled in a postsecondary school during October 1983 and February 1984. If enrolled in a school at either or both time points, they were further identified as full- or part-time, and the school was identified as a public, private or other institution, and a 2- or 4-year school.

Employment_Status

Whether or not individuals were employed or not, including part-time, during February 1984.

Military_Service

Indicates whether or not participants had ever served on active duty in the regular Armed Forces.

Children_Anticipated

Variable that designates those respondents who, according to second follow-up data, anticipated having one or more children.

Parental_Status

Identifies respondents who reported having one or more children by February, 1985.

Table B-1. Composition of 1980 sophomore cohort second follow-up survey sample by selected classification variables.

Classification variables and subgroups	Number	Percent*
Total population	14,825	100.0
Sex:		
Male	7,347	49.6
Female	7,478	50.4
Race/ethnicity:		
Hispanic	3,251	16.3
Native American	292	2.4
Asian	430	3.2
Black	2,036	15.1
White	8,624	61.6
Other	192	1.3
Socioeconomic status (SES) quartile:		
4th quartile high	3,674	23.4
3rd quartile	3,474	23.2
2nd quartile	2,886	22.6
1st quartile low	3,087	26.8
H.S. geographic region:		
East	3,494	23.6
North	3,919	26.5
South	4,566	30.8
West	2,846	19.2
H.S. urbanicity:		
Urban	3,630	24.5
Suburban	7,442	50.2
Rural	3,753	25.3
H.S. program:		
General	3,834	25.9
Academic	6,921	46.7
Vocational	3,907	26.4
H.S. grades:		
A, 90-100	595	4.0
A & B, 85-89	1,811	12.2
B, 80-84	3,026	20.4
B & C, 75-79	3,973	26.8
C, 70-74	3,392	22.9
C & D, 65-69	1,598	10.8
D, 60-64	255	1.7
Below D, less than 60	50	0.3

(Table B-1 continued on next page)

Table B-1 (continued)

Classification variables and subgroups	Number	Percent*
H.S. test quartile:		
4th quartile high	3,464	26.0
3rd quartile	3,443	25.8
2nd quartile	3,347	21.7
1st quartile low	3,967	23.6
H.S. type:		
Public	11,724	79.1
Total private	3,101	20.9
PSE plans:		
None	3,229	21.8
Vocational/technical	2,639	17.8
Less than 4-year degree	2,507	16.9
College degree	3,169	21.4
Advanced degree	2,882	19.4
H.S. course pattern--mathematics		
Concentration	1,274	8.6
4-year college-bound	4,550	30.7
General math studies	4,772	32.2
Limited or none	437	2.9
H.S. course pattern--science		
Concentration	1,259	8.5
4-year college-bound	3,415	23.0
General science studies	4,896	33.0
Limited or none	1,463	9.9
H.S. course pattern--vocational		
Concentration	2,305	15.5
Limited concentration	2,494	16.8
Sampler	5,649	38.1
Limited or none	585	3.9
IRT gain score--mathematics		
4th quartile high	2,856	19.3
3rd quartile	2,843	19.2
2nd quartile	2,724	18.5
1st quartile low	2,672	18.0
IRT gain score--science		
4th quartile high	2,713	18.3
3rd quartile	2,773	18.7
2nd quartile	2,724	18.4
1st quartile low	2,689	18.1

(Table B-1 continued on next page)

Table B-1 (continued)

Classification variables and subgroups	Number	Percent*
IRT gain score--reading		
4th quartile high	2,923	19.7
3rd quartile	2,756	18.6
2nd quartile	2,801	18.9
1st quartile low	2,684	18.1
IRT gain score--writing		
4th quartile high	2,701	18.2
3rd quartile	2,729	18.4
2nd quartile	2,656	17.9
1st quartile low	2,625	17.7
IRT gain score--vocabulary		
4th quartile high	3,070	20.7
3rd quartile	2,854	19.3
2nd quartile	2,629	17.7
1st quartile low	2,730	18.4
PSE type and status (10/83):		
Part-time private 4-year	77	.6
Part-time public 4-year	230	1.7
Part-time public 2-year	619	4.5
Part-time other	54	.4
Full-time private 4-year	1,355	9.9
Full-time public 4-year	2,361	17.3
Full-time public 2-year	1,431	10.5
Full-time other	380	2.8
Non-student	7,051	51.5
PSE type and status (2/84):		
Part-time private 4-year	72	.5
Part-time public 4-year	232	1.7
Part-time public 2-year	586	4.3
Part-time other	61	.4
Full-time private 4-year	1,317	9.6
Full-time public 4-year	2,274	16.6
Full-time public 2-year	1,320	9.6
Full-time other	355	2.6
Non-student	7,352	53.7

Note: Percentages may not add up to 100 due to rounding or to missing data

Appendix C
Technical Notes

Sample Design

Base Year Survey. HS&B employed a two-stage, highly stratified sample design.[1] In the first stage, 1,122 schools that had either 10th or 12th grade students (or both) were drawn. To make the sample more useful for policy analysis, the following types of schools were oversampled: alternative public schools, public schools with high percentages of Hispanic students, Catholic schools with high percentages of minority group students, and high-performance private schools. In the second stage, 36 sophomores and 36 seniors were randomly selected, school size permitting. The sample was augmented by the addition of the co-twins of twins selected in the probability sample.

First Follow-Up Survey. (1982) Three sampling strata were established for the first follow-up of the 1980 sophomore cohort. The first stratum contained students who, in 1982, were still enrolled in the same schools where they were surveyed during the base year (1980). The second contained sample members who had dropped out of school since the base year survey and had not returned. The third stratum contained all other school leavers, namely those who had transferred to another school, or who had received diplomas prior to their originally scheduled date of graduation.

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[1] Detailed Descriptions of the base year and first follow-up survey sample designs may be found in Sample Design Report by M. Frankel, L. Kohnke, D. Buonanno, and R. Tourangeau, National Opinion Research Center (NORC) (December 1981) and First Follow-up (1982) Sample Design Report by Roger Tourangeau, H. McWilliams, C. Jones, M. Frankel, and F.O. O'Brien, NORC.

All members of the first stratum ("still enrolled") were retained for the first follow-up, whether or not they had participated in the base year survey. All members of the second stratum ("dropouts") who had participated in the base year survey were retained; dropouts who were base year nonparticipants were sampled with a probability of .10. The first follow-up sample included 29,737 members: 25,150 "still enrolled" students, 2,601 dropouts, 1,290 transfers, and 696 early graduates.

High School Transcripts Survey (1982-83. Following completion of the first follow-up, a subsequent sample of approximately 18,500 1980 sophomores was selected for the High School Transcripts study. To enhance the usefulness of the subsample for policy analysis, the following subgroups were retained with high probabilities: students who left high school without graduating, early graduated, transfers to private schools, Hispanics and blacks, especially those with high cognitive test scores; Asian/Pacific Islanders; American Indian/Alaskan Natives; whites with low SES backgrounds with high cognitive teset scores; and persons whose parents had participated in a base year survey that collected data for addressing student financial aid piolicy decisions. High school transcripts were collected and processed for approximately 16,000 members of the transcript study sample.

Second follow-up survey (1984). A subsample of 14,825 of the 1980 sophomore selected for the High School Transcripts Survey was chosen to continue in the second follow-up survey.[2] To ensure

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[2] Second Follow-Up Sample Design Report (1984) by B. Spencer and C. Jones, NORC.

adequate subgroup sample size for anticipated policy analyses, most of the cases retained for education policy relevance in the high school transcripts study were retained with certainty in the second follow-up. The second follow-up sample also included 1,076 persons who, although selected, did not participate in the base year survey, and 723 sample cases who did not participate in the first follow-up survey. Questionnaires where also sent to all co-twins of twins included in the probability subsample.

Accuracy of Estimates. The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only on sample surveys but also in complete censuses of entire populations.

Nonsampling errors can be attributed to many sources: inability to obtain complete information about all students in all schools in the sample (e.g., some students are absent on survey day, schools or students refuse to participate, students participate but answer only certain items, etc.); ambiguities in definitions; differences in interpretation of questions; inability or unwillingness to provide correct information; mistakes in recording or coding data; and other errors of collection, response, processing, sample coverage, and estimation of missing data.

The accuracy of a survey result is determined by the joint effects of sampling and nonsampling errors. In surveys with sample sizes as large as those employed by or in HS&B, nonsampling errors

generally are the primary concern, except where separate estimates are made for relatively small subpopulations.

The three major ways in which survey data such as those obtained in HS&B may fall short of full accuracy are discussed below.

Nonresponse Bias. One of the most serious threats to the accuracy of survey estimates is bias resulting from failure to obtain data from all sampled units. A total of 811 (72 percent) of the 1,122 eligible schools chosen in the sample participated in the base year survey. Of the 311 schools that were unable or unwilling to participate, 204 were replaced with schools which matched them with regard to geographical area, enrollment size, community type, and other characteristics. This brought the total number of participating schools to 1,015 or 90 percent of the 1,122 target. A total of 1,445 eligible schools were contacted to obtain 1,015 participants.

The student-level base year survey response rate within participating schools was 85 percent. The first follow-up survey response rate was 96 percent, and the second follow-up survey response was 93 percent.

Base year survey design weights were adjusted for school-level nonresponse by appropriately distributing the design weights of nonparticipating schools to participating schools within each of 27 strata; and they were adjusted for student nonresponse by appropriately increasing the weights of participating students to compensate for students within the same school who did not

participate. First follow-up survey nonresponse weight adjustments were made based on school type for base year survey nonparticipants.

The nonresponse bias for an estimated mean (or proportion) is a product of the nonresponse rate and the magnitude of the difference in the means (or proportions) between respondents and nonrespondents. The results of the three types of analysis of the effects of nonresponse are examined in the First Follow-up Sample Design Report and the Second Follow-Up Sample Design Report. The first analysis employed the first follow-up survey school questionnaire data, which were obtained from over 400 of the 430 eligible nonparticipating schools, to estimate school nonresponse bias. For most variables, the differences between the means for all eligible schools and cooperating schools were found to be less than 1 percent.

The second analysis employed first follow-up survey data to examine base year survey student nonresponse bias. The analysis found that the magnitudes of biases generally were small and in predictable directions. The median value of the bias estimates was less than 0.4 percentage points.

The third analysis examined first follow-up survey nonresponse patterns. Since the first follow-up survey nonresponse rate was less than one-half that for the initial survey (6 vs. 15 percent), nonresponse biases should be correspondingly lower, averaging no more than 0.2 percentage points.

While item nonresponse bias has not been studied explicity, it should not present a problem for most analyses. Item response rates generally were very high. Special steps were taken to

obtain the information for the more important ("critical") questions. The steps were very successful, so that, for example, response rates of over 99 percent were achieved for selected activities as of February 1984 (chapter II) and February 1984 marital status (chapter II). Even for noncritical items the response rates were quite good; for example, 96 percent for college field of study and 99 percent for whether a loan to finance schooling ever had been obtained (chapter III); 95 percent for starting salary in first job (chapter IV); and 97 percent for life goal items (chapter V).

Reliability and validity of data. HS&B provides a rare opportunity to examine the validity and reliability of student responses to questionnaire items. The opportunity arises from three unusual aspects of the study. First, data were collected from a subsample of about 6,500 parents. These data allow assessment of the validity of student responses to many of the questionnaire items that dealt with home and family background matters. Second, HS&B included about 500 sets of twins. Comparison of the answers of twins permits evaluation of the reliability of questionnaire responses dealing with commonly shared factual information. Third, high school transcripts collected in fall 1982 for about 16,000 sophomore cohort participants permit the assessment of the accuracy of student reports of high school grades and course work.

Analysis of twin data yielded results consistent with those found by other researchers regarding similar kinds of information obtained in a similar manner from high school students and young

adults. The reliability and validity of response vary considerably depending on the nature of the item and the characteristics of the respondent. Contemporaneous, objective, and factually oriented items are more reliable and valid than subjective, temporarily remote, and ambiguous items; and older, white, and high-achieving students provide more reliable and valid responses than do younger, minority group, and low-achieving students. The results of this analysis are presented in an CS report entitled, The Quality of Responses of High School Students to Questionnaire Items. The results of an NLS-72 second follow-up survey test-retest reliability study and a review of the literature on the quality of responses to NLS-72 (and HS&B) type questions, may be found in Reliability and Validity of National Longitudinal Study Measures by A. Conger, J. Conger, and J. Riccobono, 1976, a report prepared for CS by the Research Triangle Institute.

In the future, much more accurate information about student financial aid and postsecondary education matters will be available from data obtained from official Federal grant and loan files, institution student financial aid office files, and from student transcripts.

Sampling error. All statistics presented in this report are weighted estimates of population parameters. The estimates are based on a probability sample of 14,825 individuals selected from a population of about 3.7 million. Thus, in addition to nonresponse and other sources of nonsampling error, the estimates are subject to sampling error as well.

The standard error of an estimate reflects the degree of uncertainty in the estimate which is primarily due to sampling

variation. Like most national samples, the HS&B sample, as described earlier, departs from a simple random sample in three respects: it is stratified, the selection of students were clustered by school, and certain kinds of schools and students deliberately were oversampled.

Each of these departures from simple random sampling has a predictable impact on the standard errors of sample estimates. The "root design effect" (deft) reflects the net impact of these departures on standard errors. The actual standard error is the product of deft times the corresponding estimate from a simple random sample. The median deft value for the second follow-up survey is 1.4 for estimates pertaining to the full population and 1.8 for estimates pertaining to Hispanics. The 75th percentile deft values, which were used for this report, were 1.6 and 2.0.

The standard errors of many of the estimated percentages presented in this report may be approximated, generally conservatively, by

$$s.e.(p) = 1.6[p(100-p)/n]1/2,$$

where n is the sample size (table B-1). For example, it is estimated that 47 percent of the sophomore cohort were in an academic program in high school (table B-1 shows 42 percent, which is unweighted). The standard error of this estimate is approximately

$$1.6[47(100 - 47)/14,825]1/2 = .7 \text{ percent.}$$

The reader should note that standard errors for crosstabular statistics such as those produced in this report, require ns for specified subpopulations such as males, females, Hispanics, blacks, whites, females in the highest SES quartile, Hispanics in

the third test quartile, males who attended 4-year colleges, and so forth. Cell sizes for the tables contained in this report are stored in the crosstabulations database, which is maintained by the Longtudinal Studies Branch at CS.

NORC has calculated for certain variables more precise estimates of standard errors than those approximated by the above procedure. These estimates, obtained by a procedure called "balanced repeated replication," are reported in the High School and Beyond 1980 Sophomore Cohort Second Follow-Up Data File User's Manual and the Second Follow-Up Sample Design Report, both available from CS.

In comparing estimated means (or percentages) for two subgroups, the standard error of the difference was estimated by taking the square root of the sum of the two squared standard errors. These estimates of standard errors of differences are somewhat conservative for subgroups involving different students from the same schools since they assume that the covariance of the two estimates is zero. Actually, the positive correlation between cluster (school) influences on the two means (or proportions) tends to reduce the standard error of the difference.

All differences cited in the text of the report differ from zero by at least two estimated standard errors.